Entire Operations

	Version 4.1.1	Installation and Operations

software AG

This document applies to Entire Operations Version 4.1.1 and to all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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Installation and Operations - Overview

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes and new editions.

This documentation covers the following topics:

Entire Operations 4.1.1 on Mainframe

- Installing and Setting up Entire Operations 4.1.1 on Mainframe Platforms

Note: Operating System Designations

BS2000, MVS and VSE are short designations for the corresponding operating systems, which can be found on the individual screens in this manual and in the online help. But throughout the remaining text, their long names are consistently used, i.e., BS2000/OSD, OS/390 and VSE/ESA.

Operating Systems	
Short Names	**Long Names**
BS2000	BS2000/OSD
MVS	OS/390
VSE	VSE/ESA

Entire Operations 4.1.1 on UNIX

- Installing and Setting up SAG Products on UNIX Platforms
- Installing and Setting up Entire Operations 4.1.1 on UNIX Platforms

Entire System Server on UNIX and Windows

- Installing and Setting up Entire System Server on UNIX Platforms
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Further Information

- Operations of Entire System Server on UNIX and Windows Platforms
- Performance Considerations for Adabas, Natural, Entire System Server and Entire Operations
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Installing and Setting up Entire Operations on Mainframe Platforms

Installing and Setting up Entire Operations on Mainframe Platforms

This section covers the following topics:

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Overview

Notes:

1. Do not proceed with the installation steps described in this section until you have completed installation of System Automation Tools (SAT). Please refer to the separate SAT Documentation.
2. Starting with version 1.4.1, Natural Operations has become Entire Operations, abbreviated as SYSEOR. However, the abbreviation NOP for Natural Operations is still used for Software AG internal/installation files. The same is true for Entire System Server (ESY), which was formerly Natural Process (NPR).

This section describes step by step how to complete the installation of Entire Operations under OS/390, BS2000/OSD and VSE/ESA. The main parts of it are identical for all **3** operating systems. Where the procedure differs according to operating system this is described under separate headings: OS/390, BS2000/OSD, and VSE/ESA.

This section also contains information about installation on UNIX. It is therefore recommended to read this section as well if Entire Operations is to be installed on a UNIX platform.

This section consists of the following basic parts:

1. Customizing System Automation Tools (SAT) for the Entire Operations Monitor.
2. Creating system files for the Entire Operations objects.
3. Creating executable environments under different TP monitors for using Natural in online mode.

System Maintenance Aid

The installation of Software AG products is performed by installation **jobs**. These jobs are either created **manually** or generated by System Maintenance Aid (SMA).

For information on using Software AG's System Maintenance Aid (SMA) for the installation process, refer to the **System Maintenance Aid Documentation**.

For each step of the installation procedure described below, the job number of a job performing the respective task is indicated. This job number refers to an installation job generated by SMA. If you are not using SMA, an example installation job of the same number is provided in the job library on the Entire Operations installation tape; you must adapt this example job to your requirements.

Note:
The job numbers on the tape are preceded by a product code (for example, NOPI061).

Prerequisites

This subsection covers the following topics:

- General Prerequisites
- Special Considerations
- Platforms and Required Middleware

General Prerequisites

Before you can install Entire Operations, the following Software AG products must already be installed at your site:

- Adabas Version 7.1.2 or higher;
- Natural Version 3.1.4 or higher;
- Entire System Server Version 3.1.1 or higher; note that you require Entire System Server Version 3.1 or higher if you intend to access mainframe system resources and jobs from an Entire Operations running in a UNIX environment.
- System Automation Tools (SAT) Version 3.1.2 or higher;
- Natural Security (optional);
- Entire Network (optional); this product is required for any kind of multi-CPU constellation where mainframe and/or UNIX and/or Windows partners are involved (non-local);
- Entire Broker Version 5.3.1 for BS2000/OSD or VSE/ESA;
  EntireX Broker Version 5.6.1 for OS/390;
  EntireX Broker Version 5.2.1 for UNIX or Windows platforms;
  This product is required for any kind of multi-CPU constellation, if one partner is a UNIX system or Windows or different UNIX systems are involved. Entire Broker is not required, if you are running Entire Operations on a UNIX or Windows platform and controlling the job networks on a mainframe system;

The installation procedure for Entire System Server is described in the Entire System Server Installation and Customization Documentation.

The installation procedure for SAT 3.1.2 is described in the System Automation Tools Documentation.

Special Considerations

DBID 148 is reserved for Entire System Server and must not be used for any data base.

Platforms and Required Middleware

The following products are required to connect the individual platforms:

Online System / Monitor	Job Execution	Connection / Products
mainframe	mainframe (local *)	none
mainframe	other mainframe	Entire Network
mainframe	UNIX	Entire Network and Entire Broker
mainframe	Windows	Entire Network and Entire Broker
UNIX	UNIX (local *)	none
UNIX	other UNIX	Entire Network and Entire Broker
UNIX	Windows	Entire Network and Entire Broker
UNIX	mainframe	Entire Network

*** Local** means that the Entire Operations online system is installed on the same machine on which jobs are executed.

Combinations are also possible. For example, if you want to install the Entire Operations online system on one mainframe and execute jobs on another mainframe and another UNIX or Windows machine, you would need:

- 3 Entire Networks (one for each system to be connected) for connecting to the other mainframe and to UNIX or Windows, and
- Entire Broker (on one system) for connecting to UNIX or Windows.

Installation Tape

This subsection covers the following topics:

- Contents of the Installation Tape
- Installing an Update Tape

Contents of the Installation Tape

The installation tape contains the files listed in the table below. The sequence of the files is shown in the **Report of Tape Creation** which accompanies the installation tape.

File Name	Contents
NOPnnn.JOBS	Entire Operations Installation Jobs (OS/390 and BS2000/OSD)
NOPnnn.LIBR	Entire Operations Load Library & Installation Jobs (VSE/ESA)
NOPnnn.SYS1	Entire Operations System File 1 (Adabas)
NOPnnn.SYS3	Entire Operations System File 3 (Adabas)
NOPnnn.INPL	Entire Operations System Libraries (Natural)
NOPnnn.ERRN	Entire Operations Error Messages (Natural)
NOPnnn.DATA	Input data (sample network definitions) for Entire Operations Import Utility.

***** Some files for the solution of certain SAGSIS problems maybe included on the installation tape. Please refer to the problem descriptions before applying them.

The notation *nnn* in file names represents the version number of the product.

System Automation Tools files are included as described in the separate SAT Documentation.

Installing an Update Tape

The following applies to the Entire System Management products Entire Operations, Entire Output Management and Entire Event Management.

Before you update any production library or file using a single solution or an update tape containing a series of solutions supplied by Software AG, you must stop the Monitor of the relevant Entire System Management product. Do not start the Monitor before your entire update process is completed successfully. Use the Natural utility SYSBPM to purge all modules of the application SYSEOR from the Natural buffer pool.

This is necessary to avoid mixing the versions of the delivered software, for example in Natural libraries where such a mixture may lead to parameter errors like NAT0935, NAT0936 etc.

Storage Requirements

During installation, the following files are loaded from the installation tape:

File Name	OS/390		BS2000/OSD	VSE/ESA
	Type	Tracks / Cylinders on 3380 Disk	PAM Pages	Tracks / Cylinders on 3380 Disk
NOPnnn.JOBS	PDS	2 tracks	192	n/a
NOPnnn.LOAD	PDS	1 track	n/a	n/a
NOPnnn.INPL	SEQ	12 cylinders	3105	12 cylinders
NOPnnn.ERRN	SEQ	16 tracks	336	16 tracks
NOPnnn.SYS1	SEQ	7 tracks	168	7 tracks
NOPnnn.SYS3	SEQ	1 track	33	1 track
NOPnnn.DATA	SEQ	1 cylinder	306	1 cylinder
NOPnnn.LIBR	SUBLIB	n/a	n/a	1 track

Copying the Tape Contents to Disk

This subsection covers the following topics:

- OS/390
- BS2000/OSD
- VSE/ESA

OS/390

If you are using System Maintenance Aid (SMA), refer to the SMA documentation (included on the current edition of the Natural documentation CD).

If you are not using SMA: Follow the instructions below.

This section explains how to:

- Copy data set COPY.JOB from tape to disk.
- Modify this data set to conform with your local naming conventions.

The JCL in this data set is then used to copy all data sets from tape to disk. After that, you will have to perform the individual install procedure for each component.

Step 1 - Copy data set COPY.JOB from tape to disk

The data set COPY.JOB (label 2) contains the JCL to unload all other existing data sets from tape to disk. To unload COPY.JOB, use the following sample JCL:

```
//SAGTAPE JOB SAG,CLASS=1,MSGCLASS=X
//* -------------------------------
//COPY EXEC PGM=IEBGENER
//SYSUT1 DD DSN=COPY.JOB,
// DISP=(OLD,PASS),
// UNIT=(CASS,,DEFER),
// VOL=(,RETAIN,SER=<Tnnnnn>),
// LABEL=(2,SL)
//SYSUT2 DD DSN=<hilev>.COPY.JOB,
// DISP=(NEW,CATLG,DELETE),
// UNIT=3390,VOL=SER=<vvvvvv>,
// SPACE=(TRK,(1,1),RLSE),
// DCB=*.SYSUT1
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
//
```

Where:

<*hilev*>	is a valid high level qualifier
<*Tnnnnn*>	is the tape number
<*vvvvvv*>	is the desired volser

Step 2 - Modify COPY.JOB to conform with your local naming conventions

There are three parameters you have to set before you can submit this job:

- Set HILEV to a valid high level qualifier.
- Set LOCATION to a storage location.
- Set EXPDT to a valid expiration date.

Step 3 - Submit COPY.JOB

Submit COPY.JOB to unload all other data sets from the tape to your disk.

BS2000/OSD

If you are not using SMA, copy the files from tape to disk using the procedure described below. In this procedure, the following values must be supplied:

- In the file names, replace *nnn* with the current version of the files.
- Replace *nnnnnn* with the volume serial number of the tape.

1. Copy the job file NOPnnn.JOBS from tape to disk using the BS2000/OSD utility PERCON or EDT.

   If you use PERCON, issue the following commands:

```
/FILE NOPnnn.JOBS,VOL=nnnnnn,DEV=T9G,STATE=FOREIGN   -
      ,BLKSIZE=,RECSIZE=,FCBTYPE=,RECFORM=  -
      ,FSEQ=UNK,LINK=PCIN
    /FILE P.NOPnnn,LINK=PCOUT
    /EXEC $PERCON
    END
```

   If you use EDT, issue the following commands:

```
/FILE NOPnnn.JOBS,VOL=nnnnnn,DEV=T9G,STATE=FOREIGN   -
      ,FSEQ=UNK,LINK=EDTSAM
/EXEC $EDT
§ READ '/'
§ SY '/REL EDTSAM'
§ WRITE 'P.NOPnnn'
§ HALT
```

2. Issue the command:

```
/CALL P.NOPnnn,PRODUCT=NOPnnn
```

   An example job library LIB.NOPnnn is created from the procedure file.

3. Adapt job E.NOPTAPE from the example job library.

   Then issue the following command to run the job, which copies all files from tape to disk:

```
/E LIB.NOPnnn(E.NOPTAPE)
```


VSE/ESA

The sample JCS supplied on tape for the installation of Entire Operations assumes one library (SAGLIB).

Copy the sublibrary containing the sample installation jobs and object modules from tape using the following JCS:

```
* $$ JOB JNM=RESTORE,CLASS=0
* $$     DISP=D,LDEST=*
* $$ LST CLASS=A,DISP=D
// JOB RESTORE
// ASSGN SYS005,IGN
// ASSGN SYS006,CUU,VOL=xxxxxx
// MTC REW,SYS006
// MTC FSF,SYS006,nn                 * For the value of nn, see the tape report
* *** Now process NOPnnnJ.LIBR - JOBS ***
// EXEC LIBR,PARM='MSHP'
 RESTORE SUB=(SAGLIB.NOPnnn:SAGLIB.NOPnnn -
         SAGLIB.NOPnnnJ:SAGLIB.NOPnnnJ) -
         TAPE=SYS006 -
         LIST=YES -
         REPLACE=YES
/*
/&
* $$ EOJ
```

The notation *nnn* represents the version number of the product.
The notation *xxxxxx* represents the volume serial number of the tape.

All further data sets will be used directly from tape by the installation jobs.

Installation / Migration Procedure for NOP

This subsection covers the following topics:

- Step1: Load System Files
- Step 2: Load System Objects and Error Messages
- Migration from NOP Versions before 321 to NOP 411
- Migration from NOP 321 to NOP 411
- Step 3: Install the Entire Operations Monitor
- Step 4: Adapt SAT Parameters for Entire Operations
- Notes about the Migration of Log Data to the SAT Log File Format

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Step1: Load System Files

Job I050, Steps 2100/2102

Entire Operations System File 1

Entire Operations System File **1** holds all definitions and information needed to control the batch job processing. The file supplied on the installation tape contains some examples. If you do not want these examples, load the file with the ADALOD parameter NUMREC=0.

Step 2: Load System Objects and Error Messages

Job I051

Note:
This runs only if an Entire Operations version less than 4.1.1 was installed.

Job I051, Step 2100 deletes old objects starting with NOP* in the SYSTEM library on FNAT and FUSER.

Step 2101 deletes all objects of the previously installed version from the SYSEOR library.

Job I061

Use the Natural system command INPL (which is described in the **Natural Reference Documentation**) to load the Entire Operations system objects (file NOPnnn.INPL, Job I061, Step 2100).

The following libraries are loaded:

Library	File	Contents
SYSEOR	FNAT	Entire Operations Programs
SYSEORH1	FNAT	Entire Operations Help Data (English)
SYSEORH2	FNAT	Entire Operations Help Data (German)
SYSTEM	FUSER	Entire Operations Programs starting with NOP...
SYSEORU	FNAT	Entire Operations Example User Routine

Load the Entire Operations error messages file (file NOPnnn.ERRN) using the ERRLODUS utility in Step 2102. The ERRLODUS utility is described in the section **SYSERR Utility** of the **Natural Utilities Documentation.**

Job I082, Step 2111

Copy module MENU from library SYSSAT to library SYSEOR (in non-security environments only).

For existing Entire Operations installations, the following migration paths are possible:

Job I082, Steps 2104-2109

From Version	To Version	Use Job, Steps
NOP 311	NOP 321	I082 2104, 2105
NOP 321	NOP 411	I082 2107, 2109

Migration from NOP Versions before 321 to NOP 411

Job I082, Steps 2104, 2105

1. For System File **1**, Step 2104:

Field	Length (3.1.1)	Length (3.2.1)	Remarks
BZ	10	20	length modified
C7	8	20	length modified
CJ	10	20	length modified
DL	3	8	length modified
EM	16	20	length modified
F4	16	20	length modified
I9	10	20	length modified
KD	8	20	length modified
KH	10	20	length modified
VM	8	20	length modified

2. For System File **1**, Step 2105: The field **Y2** will be made a descriptor: it will be inverted.

It is also possible to use the NOP Import / Export Facility to migrate the data of the System File 1.

The log data must be migrated as described under Migration from NOP 321 to NOP 411.

Migration from NOP 321 to NOP 411

- Migration of System File 1
- Migration of Log Data from NOP Versions before 411 to Version 411 and above
- Migration of SAT Log File

Job I082, Steps 2107, 2109

Migration of System File 1

Backup System Files **1** and **2**. The following changes will be performed on System File 1.
This job contains 2 steps:

1. For System File **1**, Step 2107:

Field	Length (3.2.1)	Length (4.1.1)	Remarks
A0	U 4 NU	U 5 NU	
AK	U 3 NU	U 5 NU	
AS	A 54 NU	A 70 NU	
DG	A 6 NU	A 8 NU	
F1	-	P 7 DE NU	new, descriptor
FX	U 7 NU	U 9 NU	
FZ	U 7 NU	U 9 NU	
HZ	-	A 8 NU	new
IF	P 7 DE NU	P 7 NU	descriptor released
JA	-	A 10 NU	new
JB	-	A 10 NU	new
JC	-	A 10 NU	new
JD	-	P 7 NU	new
JE	-	A 10 NU	new
JF	-	A 20 DE NU	new, descriptor
JG	-	A 20 DE NU	new, descriptor
JH	-	A 10 NU	new
JI	-	A 10 NU	new
JJ	-	A 10 NU	new
JK	-	P 7 NU	new
JL	-	A 10 NU	new

2. For System File **1**, Step 2109:

Field	Length (3.2.1)	Length (4.1.1)	Remarks
GP	-	A 67 NU	new, superdescriptor supde= 'GP=JA(1,10),JB(1,10),JC(1,10),JD(1,7),JE(1,10),JF(1,20)
GR	-	A 47 NU	new, superdescriptor supde= 'GR=JH(1,10),JI(1,10),JJ(1,10),JK(1,7),JL(1,10)'
GS	-	A 18 NU	new, superdescriptor SUPDE='GS=B9(1,11),IF(1,7)'

Note:
After migration of the NOP System File 1, please invoke the direct command TECH from the NOP command line to update the internal version control record.

Migration of Log Data from NOP Versions before 411 to Version 411 and above

Note:
The migration of log data may be run **only** if both the old and the new NOP Monitors are **not running**.

For additional information about the migration of log data, please refer to the Installation Notes.

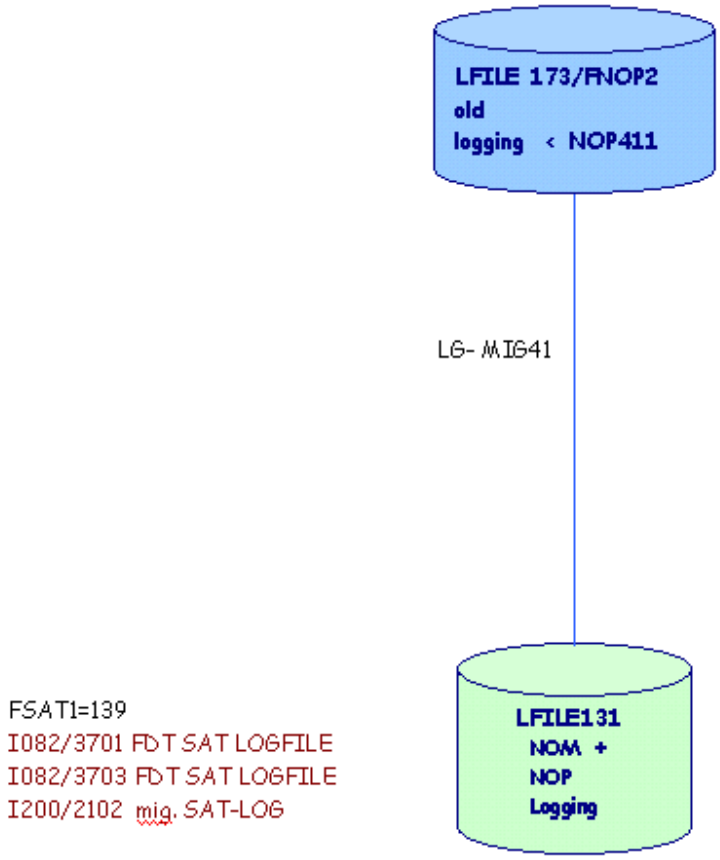
If a common SAT log file is to be used (OS/390, VSE/ESA, BS2000/OSD):

- The SMA Parameter **NOP-OWN-LOGFILE** must be set to **NO**.
  This parameter does not apply to BS2000/OSD.
- If the SAT log file was installed with SAT 311 and NOM 211, it must be adapted for the common usage with NOP.
  For FDT changes, the following jobs will be executed :
  1. **I082/3701**, FDT SAT Log (part of SAT installation)
  2. **I082/3703**, FDT SAT Log (part of SAT installation)

  See Migration of SAT Log File.
- For SAT LOG migration, the following job will be executed:
  - **I200/2102**

  FSAT1=139 will be used.

Logging BS2000

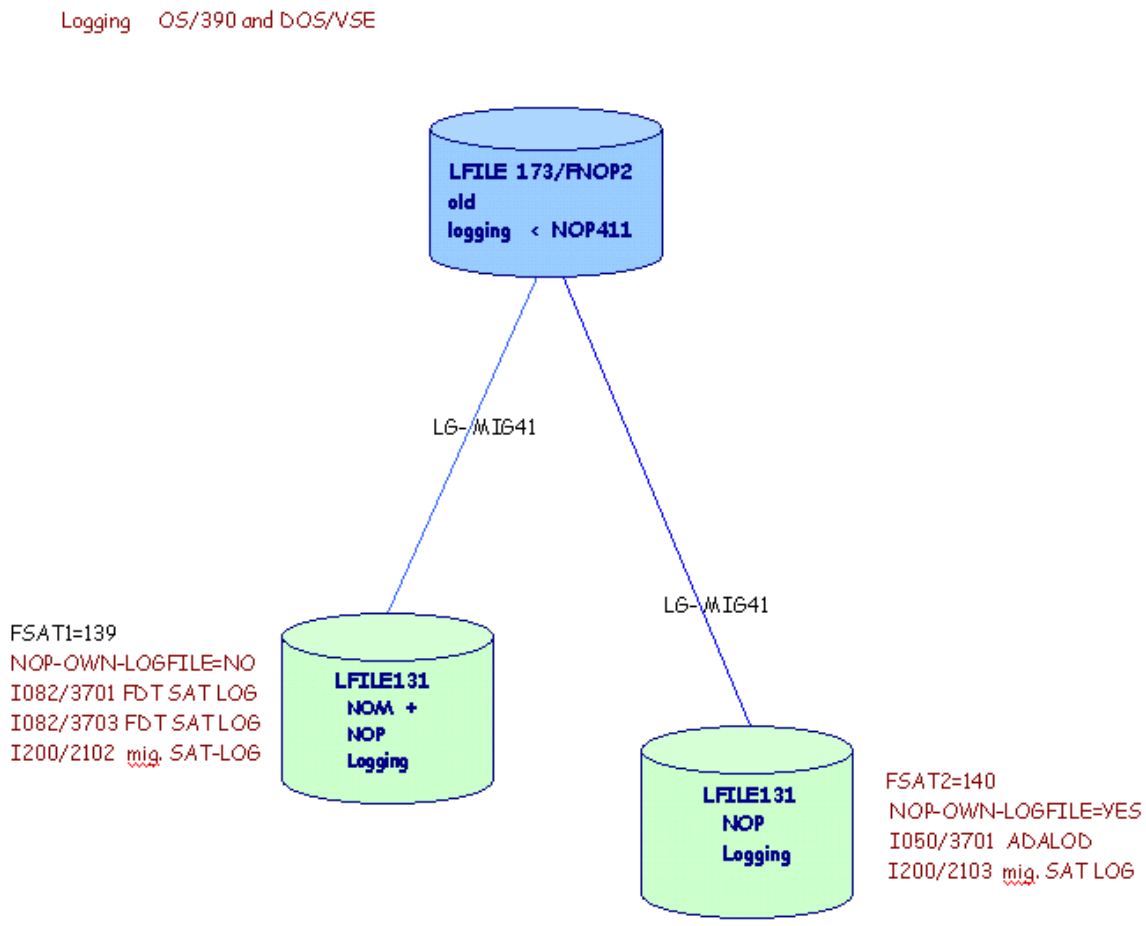


Note:
This is the recommended procedure for BS2000/OSD.

If separate SAT log files shall be used (OS/390, VSE/ESA):

- The SMA Parameter **NOP-OWN-LOGFILE=YES** must be set. FSAT2=140 is a new NOP logging file. This parameter does not apply to BS2000/OSD.
- The following jobs will be executed:
  1. **I050/3701**, ADALOD (FSAT2)
  2. **I200/2103**, migration SAT Log

  FSAT2=140 will be used.
- For additional information about the usage of separate log files for different ESM products, please refer to the Installation Notes.



Note:
For BS2000/OSD, these steps must be executed manually.

Migration of SAT Log File

This step is necessary only if a SAT log file has been installed with NOM 211 and SAT 311 already.

Backup the existing SAT log file. The jobs to perform this migration are included in the procedure above.

Job I082 Step 3701

Field	Length (SAT 3.1.1)	Length (SAT 3.1.2)	Remarks
AU	-	A 8 NU	new field

Job I082 Step 3703

Field	Length (SAT 3.1.1)	Length (SAT 3.1.2)	Remarks
S8	-	A 30 DE NU	new, superdescriptor supde='S8=AB(1,10),AG(1,20)'

Step 3: Install the Entire Operations Monitor

The following additional definitions are required in the Natural parameter modules for online and batch (=Monitor):

NTFILE	ID=216,DBID=<DBID-216>,FNR=<FNR-216>	Entire Operations System File 1
NTFILE	ID=131,DBID=<DBID-131>,FNR=<FNR-131>	SAT Log File
NTFILE	ID=215,DBID=<DBID-215>,FNR=<FNR-215>	Entire Operations System File 3 (optional) [1]
NTFILE	ID=206,DBID=<DBID-206>,FNR=<FNR-206>	Entire Output Management System File (optional)
NTFILE	ID=251,DBID=<DBID-251>,FNR=<FNR-251>	Con-nect File (optional)

[1] Entire Operations System File 3 is the Log Selection File. This file is required only if you use the extraction of log data described in Special API Routines for Entire Operations in the Entire Operations User´s Guide.

Note:
The NTFILE settings can be overridden at any time by dynamic LFILE definitions in the SAT NATENV subsection for the Entire Operations Monitor.

Step 4: Adapt SAT Parameters for Entire Operations

- Mandatory Parameter Blocks/Parameters
- Specific Parameters
- Example

Mandatory Parameter Blocks/Parameters

Param. Block	Parameter	Description
SATENV	NSC=YES/NO	Indicates whether Natural Security is installed or not.
	NSCUSER=	If Natural Security is installed, this is the user ID for logging on to it.
	NSCPSWD=	Password for logging on to Natural Security.
	ESYUSER=	User ID for logging on to Entire System Server, if it is installed and an interface to an external security system is activated.
	NATTASK=	Name of the Natural subtask module for starting a server as a subtask.
SATSTART	SATVERS=31	The Entire Operations Server startup program must use SAT version 3.1.2.
	PRODUCT=NOP	3-byte product code.
	PREFIX=	PRODUCT and PREFIX are compressed into a prefix which identifies the Server-specific parameters.
	TYPE=BATCH/SUBTASK	Entire Operations Servers can be started as subtasks or batch jobs. [1]
	APPLIB=SYSEOR	Name of the Natural library where Entire Operations Server is installed.
	SERVSYSF=	DBID and file number for Entire Operations System File 1 (must be unique within all SATSTART instructions of this node).
NATENV	LFILE=(216,<NOPSYSF1-DBID>,<NOPSYSF1-FNR>) [2, 4]	
	LFILE=(131,<SAT-LOG-DBID>,<SAT-LOG-FNR>) [3, 4]	
	ID=’,’	Input delimiter.
	IM=D	Input mode.

[1] Under BS2000/OSD these subtasks are simulated by Entire System Server.

[2] Pointer to Entire Operations System File 1

[3] Pointer to SAT Log File.

[4] These pointers can be alternately set in the common NATPARM module created for the SAT products or in a Natural parameter profile indicated by the Natural parameter PROFILE.

Specific Parameters

Furthermore, you can overwrite the SATENV and NATENV parameters with Entire Operations-specific assignments. The naming convention for the prefix which identifies the parameter block is:

```
<Prefix> = NOP+<Prefix from SATSTART block>
```

Parameter Block	Parameter
SATSTART	MEMBER= [1]

[1] You can specify a member where Entire Operations-specific parameters are located.

Example

- SAT Environment Settings
- Natural Environment Settings
- Product Automatic Start

SAT Environment Settings

SAT	SATENV	NATTASK=NSATT08, NATBATCH=NAT315BA, NATSKEL=EORJSMVS, NSC=YES, NSCUSER=EORMON, NSCPSWD=EORMON1	
NOP411	SATENV	NATTASK=NSATT08, NATBATCH=NAT315BA, NATSKEL=EORJSMVS, NSC=YES, NSCUSER=EORMON, NSCPSWD=EORMON1	/* SYSEOR 411 SUBTASK
NOPBAT	SATENV	NATTASK=NSATT08, NATBATCH=NAT315BA, NATSKEL=EORJSMVS, JOBPREF=SN, NSC=NO	/* SYSEOR 411 BATCH /* OPS.SYSF.PROD.LOAD /* JOB NAME PREFIX

Natural Environment Settings

SAT	NATENV	DU=OFF	
NOP411	NATENV	FUSER=(9,90),FNAT=(9,80),FSEC=(9,83), MAXCL=0,MADIO=0,MT=0,AUTO=OFF, IM=D,ID=’,’, WH=ON, LFILE=(216,9,89), LFILE=(131,9,23), LFILE=(251,21,16), LFILE=(206,9,111), LFILE=(204,9,80)	/* SYSEOR SYS 1 /* SAT LOG /* CNT SYSF /* NOM SYSF /* SYSSATU FNAT
NOPBAT	NATENV	PARM=E31122BP,IM=D,AUTO=OFF FUSER=(9,90) LFILE=(204,9,80)	/* SYSSATU FNAT

Product Automatic Start

SAT ***** *****	SATSTART	SATVERS=31, PRODUCT=NOP, PREFIX=411, TYPE=SUBTASK, PREFIX=411, TYPE=BATCH, APPLLIB=SYSEOR, SERVSYSF=(9,89)	/* SYSEOR 411 SUBTASK /* SYSEOR 411 BATCH

For an explanation of the SAT parameters, see the description of System Automation Tools in the separate SAT Documentation.

Notes:

1. NOP411 and NOPBAT are the proposed names for SYSEOR SUBTASK and SYSEOR BATCH and can be modified.
2. If Natural Security is installed, specify AUTO=OFF in NATENV; if not installed, specify AUTO=ON.

Interfaces to other Software AG Products

This subsection covers the following topics:

- Con-nect Interface
- Interface to Entire Output Management (NOM)

Con-nect Interface

If you intend to transfer messages from Entire Operations to Con-nect, the application programming interface must be copied; you must copy all objects starting with **Z** from the library SYSCNT2 to the library SYSEOR.

In addition, you have to add a **standalone** cabinet to Con-nect with:

Name	Password	Description
SYSEOR	SYSEOR	Entire Operations Monitor

This cabinet serves as a sender-cabinet for the indicated messages and has no other functions. Ensure that the cabinet SYSEOR is never locked because this forces a Monitor abend.

Interface to Entire Output Management (NOM)

If you want to use the Entire Output Management (NOM) Application Programming Interface to pass SYSOUT and files to Entire Output Management, you must:

- Define the LFILE 206 for the Entire Output Management System File in the System Automation Tools startup parameters, and/or define the NTFILE 206 in the Natural parameter module for Entire Operations.
- Add the library SYSNOM (Entire Output Management Application Programming Interface) to the STEPLIB definitions of Entire Operations in Natural Security.

Interfaces to other Operating Systems

This subsection covers the following topics:

- OS/390 Interfaces
- BS2000/OSD Interfaces
- UNIX and Windows Interfaces
- SAP R/3 Interfaces

OS/390 Interfaces

- **CA-LIBRARIAN Interface**

  To activate the CA-LIBRARIAN interface, you must assemble and link the Entire System Server module NATPAML into the Entire System Server Load Library. For instructions, please refer to the Entire System Server Reference Documentation.

- **Force Job Display To Console**

  To recognize whether a job has terminated normally, Entire Operations needs the terminate message (IEF404I ...) for each job. If not yet installed, modify each member CONSOLxx in the SYS1.PARMLIB library, which defines the OS/390 master console and alternate consoles.

  Insert the entry MONITOR(JOBNAMES-T) for automatic job display.
  Make sure there is no entry in any MPFLSTxx member in SYS1.PARMLIB to suppress message IEF404I.

BS2000/OSD Interfaces

- **LMS Interface**

  For access to LMS elements from Entire Operations, LMS version V1.4Axy or higher is required.

- **UCON Interface**

  For the following functions the UCON interface of Entire System Server is required:

  - Sending messages via an Entire System Server node
  - Cancel jobs
  - Hold jobs
  - Release jobs

  The UCON interface is accessed by the Entire System Server view CONSOLE. This means that the Entire System Server jobs for the console must have been started.

  If you use Entire System Server in multi-user mode (node number other than **148**) these tasks will be started by Entire System Server nucleus.
  In single user mode, the UCON interface is only available from the user ID where the active and passive console tasks of Entire System Server are running.

UNIX and Windows Interfaces

For more information related to UNIX and Windows system access, see the subsection Entire Operations in Client/Server Environments.

SAP R/3 Interfaces

For more information related to SAP R/3 access, see the Entire Operations User´s Guide.

Security Definitions

This subsection covers the following topics:

- With Natural Security
- Without Natural Security
- External Security System

With Natural Security

If Natural Security is installed at your site, you must create the following definitions:

- Applications
- Users

Applications

SYSEOR	Entire Operations Programs
SYSEORH1	Entire Operations Help Data (English)
SYSEORH2	Entire Operations Help Data (German)
SYSEORU	Entire Operations User Routines & JCL (NAT & MAC)

Notes:

- **For all applications:**
  Do not define a startup program.
  Do not define Clear Source area by Logon within Security Options.
  These security parameters must also be installed for any additional user applications.
- **For SYSEOR - define in this order:**
  1. STEPLIB=SYSSAT
  2. STEPLIB=SYSNOM
     (only if Entire Output Management is available)
  3. STEPLIB=SYSLIBS
  4. STEPLIB=SYSEXT
  5. STEPLIB=SYSTEM

  Do not define the error transaction: NOPERROR. (This had to be done explicitly in former versions of Entire Operations).

- **For user libraries and SYSEORU (JCL, macros, user exits) - define in this order:**
  1. STEPLIB=SYSEOR
  2. STEPLIB=SYSSAT
  3. STEPLIB=SYSLIBS
  4. STEPLIB=SYSEXT
  5. STEPLIB=SYSTEM

Users

(defined as person in Natural Security)

EORMON	Entire Operations Monitor

Note:
Link user EORMON to all Entire Operations applications as listed above.

Without Natural Security

If Natural Security is not installed at your site, proceed as follows:

Edit the System Automation Tools member as described in the subsection Parameter Blocks and Parameters of the SAT Documentation. Add the following lines to the parameter block of Entire Operations (SATENV):

1. STEPLIB1=(SYSEOR, dbid, fnr)
2. STEPLIB2=(SYSSAT, dbid, fnr)
3. STEPLIB3=(SYSNOM, dbid, fnr)
4. STEPLIB4=(SYSLIBS, dbid, fnr)
5. STEPLIB5=(SYSEXT, dbid, fnr)
6. STEPLIB6=(SYSTEM, dbid, fnr)

Copy all modules beginning with the prefix NOP from the SYSEOR library to the SYSTEM library. If you use FNAT user libraries, (for example, SYSEORU), you must copy the modules to the SYSTEM library on FNAT. If you use FUSER user libraries, you must copy the modules to the SYSTEM library on FUSER.

External Security System

If Entire System Server is installed with an external security system (RACF, ACF2, TOP SECRET), a user ID for the Entire Operations Monitor must be defined in the security system. The user ID is **EORnnn01**, where *nnn* is the Monitor node number. For example, if the Monitor node is **148**, define the user ID as **EOR14801**.

BS2000/OSD

Define the BS2000/OSD user ID under which the Entire Operations Monitor runs (usually TSOS).

Note:
Link user for the Entire Operations Monitor to all Entire Operations applications as listed above.

Starting NOP for the First Time

This subsection covers the following topics:

- First Installation Steps
- BS2000/OSD
- Installation Verification
- Possible Errors

First Installation Steps

If you are logged on to the SYSEOR library, you must enter the direct command INSTALL.

After the first start, the Entire Operations Installation screen is automatically invoked:

```
 20.11.01              *** Entire Operations 4.1.1 ***              10:29:29
                                Installation

 ------------------------------------------------------------------------------
 This program will help to make some initial definitions for and within
 Entire Operations.
 The most definitions can be modified later, by using the
 'System Adminstration' online functions.

 If you do not want to continue, please press the PF3 key.
 If you want to continue, please enter the following:


      User ID of the Entire Operations System Administrator ===> SYSDBA__


 Enter  ==> Continue Installation
 PF3    ==> End



Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
                  End
```

To proceed with installation

- Enter SYSDBA in the User ID field of this screen and press Enter.

  During the installation procedure, you can add your own user ID.

This enables you to customize Entire Operations by following the steps described in the section System Administrator Services. This includes:

- Entire Operations Defaults;

  BS2000/OSD only:
  You should at least modify the activation and submission escape characters, since $ and § cannot be used in BS2000/OSD. You should use ^ and ' (accent grave).

- Definition of Nodes - the user can delete unnecessary node definitions and add the appropriate ones;
- User Maintenance.

Notes:

1. You cannot start the Entire Operations Monitor until the installation is finished.
2. You will be forced to leave the Natural session after termination of the Install program.
   The reason is that some of the definitions are necessary for a regular user session.
   If you want to work with Entire Operations after INSTALL, you must start a new Natural session.

BS2000/OSD

Note for TIAM-Natural

If you run your Natural under TIAM, it is possible to access Entire System Server as well as the Editor in single-user mode. To do this, the following FILE statements must be given before starting Natural:

```
/FILE <NPRLIB>,LINK=DDLIB2          (for ESY single user mode)
```

where <NPRLIB> is the Entire System Server load library,

```
/FILE <workfile>,LINK=CMEDIT        (for Editor single-user mode)
```

where <workfile> must be the user-specific workfile, and <workfile> may not be accessed by any other task (refer to the subsection **Installing the Software AG Editor** in the **Natural Installation Guide for Mainframes**.)

Note for UTM-Natural

If you run your Natural under UTM, you must not use single-user mode for Entire System Server or the Editor.

This means that node number 148 may not be given in any definition within Entire Operations, and a global Editor Buffer Pool must have been installed.

Installation Verification

- Installation Verification Prerequisites
- Activating Sample Job Networks

If you have installed Entire Operations properly, issue the TECH command to display technical information for your installation. For details, see the subsection Online Technical Information in the section Logging on to Entire Operations of the Entire Operations User´s Guide.

Note:
The TECH command must be used to synchronize the version and date of both your online Entire Operations system and your Entire Operations Monitor - for example, if the error message **wrong monitor version** appears after the INPL of an Entire Operations update tape. The TECH command is invoked automatically within the INSTALL program.

After having started the Entire Operations Monitor, you can now start some sample networks that are included in System File 1 on the installation tape. You can find these sample networks under the owner EXAMPLE.

Notes:

- For detailed information on starting the Entire Operations Monitor, see the subsection Starting a Server in the SAT Documentation and the subsection Entire Operations Monitor in the Entire Operations System Administrator Services Documentation.
- You cannot start these sample networks, if you have loaded your Entire Operations System File with NUMREC=0.

Installation Verification Prerequisites

You must adapt the job networks of the owner EXAMPLE, which you want to use for the installation verification.

It is recommended that you use the following networks:

Operating System	Network	Description
BS2000/OSD	B60-FLOW	BS2000/OSD Job Flow
OS/390	E60-FLOW	OS/390
VSE/ESA/ESA	V60-FLOW	VSE/ESA Job Flow
UNIX	X60-FLOW	UNIX Job Flow

You must perform the following steps:

1. Check whether the node table contains all operating system server nodes you need (see the subsection Definition of Nodes in the section System Administrator Services).
2. For each node you want to use: enter the direct command LOGON SERVER <node-number> and perform a logon with a valid user ID and password. This must be done to check the availability of the node, and to obtain the operating system information from the node.
3. Go to the Network Modification screen and set the fields Execution Node and JCL Node to a valid node number. If you are using network B60-FLOW or X60-FLOW, you must also check the special defaults using PF6 from this screen; then set the field Submit User ID (and for B60-FLOW also Sysout User ID) to a user ID valid in your environment.
4. The node numbers above must be propagated to all jobs of the network. Press PF9 to display the screen Application of Network Defaults to Jobs. Enter **S** before Exec Node and JCL Node and press Enter to modify the jobs. For network B60-FLOW or X60-FLOW, you must also enter **S** before the User ID field(s) you modified in step 3.
5. For most of the sample job networks, you will find the name of a symbol table on the Network Modification screen. Press PF7 to display the symbols within that table. Check the symbols listed in the table and, if necessary, adapt them for your needs. Use the line command **M** for modifications.
6. Go to the Calendar Maintenance screen. Make sure that the calendar EXAMPLECAL is defined for the current year.
7. If you use Natural Security: Make sure that the library SYSEORU is defined as **public library**. If it is defined as **people protected**, you need a link to your user ID and to the user ID of the Entire Operations Monitor.

Activating Sample Job Networks

- Activating a Sample Network
- Checking the Entire Operations Log


```
 20.11.01               *** Entire Operations 4.1.1 ***              10:52:33
 Owner EXAMPLE                      Main Menu                   User ID GHH
 ------------------------------------------------------------------------------

     Main Menu                                DC Solutions

   1  Network and Job Maintenance         20  Entire Event Management (V132)
   2  Active Job Networks                 21  Entire Output Management (V134)
   3  Calendar Maintenance
   4  Log Information
   5  Symbol Tables
   6  System Administrator Services
   7  Reports                                  Applications
   8  Import/Export
   9  Help                                30  sysmain




 Command => _____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help        End                                           Owner Mail
```

1. On the Entire Operations Main Menu (example above), enter **1** (Network and Job Maintenance) and press Enter.

   The Network Maintenance screen appears:

```
SYSEOR0070 - No Objects found for this Selection
 20.11.01               *** Entire Operations 4.1.1 ***              11:00:31
 Owner T                       Network Maintenance
 Selection OR________
------------------------------------------------------------------------------
 Cmd #Run Owner      Network    Node Description
          *--------- *---------
 _
 _
 _
 _
 _
 _
 _
 _
 _
 _
 _

  A Active C Copy D Delete F Flow G Grant H Check L List Jobs M Modify
  N Deact P Prose R Activate S Schedule T Acct W Display Schedule X History
 Command => _____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
     Help  Add   End         Save        Up    Down              NxtAc Menu
```

2. If you are not under the owner EXAMPLE, enter SET OWNER EXAMPLE in the command line and press Enter.

   (If this does not work, check your user definition for the linked owners.)


```
SYSEOR0013 - Owner is now EXAMPLE
 20.11.01               *** Entire Operations 4.1.1 ***               11:02:20
 Owner EXAMPLE                Network Maintenance
 Selection OR________
--------------------------------------------------------------------------------
 Cmd #Run Owner      Network    Node Description
          *--------- *---------
 _        EXAMPLE    E60-FLOW   146  Job Flow for OS/390
 _        EXAMPLE    B60-FLOW    31  Job Flow for BS2000/OSD
 _        EXAMPLE    V60-FLOW    33  Job Flow for VSE/ESA
 _        EXAMPLE    X60-FLOW   501  UNIX job Flow
 _
 _
 _
 _
 _
 _
 _
 ********************************** m o r e ***********************************
  A Active C Copy D Delete F Flow G Grant H Check L List Jobs M Modify
  N Deact P Prose R Activate S Schedule T Acct W Display Schedule X History
 Command => ____________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Add   End         Save        Up    Down              NxtSt Menu
```

The networks are divided into different application groups. Each network consists of various jobs and demonstrates one feature of Entire Operations. These are:

- Completion codes
- Input conditions
- Output conditions
- Events
- JCL generation
- Recovery
- User routines
- Mailboxes
- Resources
- Job flow
- Con-nect interface

The following sample networks are provided:

- E60-FLOW (for OS/390)
- B60-FLOW(for BS2000/OSD)
- V60-FLOW (for VSE/ESA)
- X60-FLOW (for UNIX)

Sample networks for OS/390 start with the letter **E**, for BS2000/OSD with **B**, for VSE/ESA with **V** and for UNIX with **X**.

The sample networks demonstrate a sequence of interdependent jobs and are used to ensure that all of your installation has been successfully completed.

Activating a Sample Network

To activate a sample network

- Enter **R** in the input field of the Cmd column preceding the network name on the Network Maintenance screen and press Enter.

Checking the Entire Operations Log

To check the Entire Operations log

- Enter LOG in the Command => line and press Enter. The sample jobs of your network should have been started and have ended **ok**. If this is not the case, check that you have performed the installation correctly.

Notes:

1. The following message in LOG can be ignored if you are using sample networks that were issued with Entire Operations 1.4x: Inv.Out Cond.Ref: E60-JOB-1 RUN-1.
   If you are using native Entire Operations 3.1.1 sample networks, this message is unlikely to occur.
2. In a VSE/ESA environment, before activating network V60-FLOW, you are recommended to verify the definitions of End-of-Job actions for JOB-01 of this network. For this job, some message recipients are defined which may not exist in your environment. You can either overwrite these recipients with valid destination IDs, or else delete all recipient definitions. For details, see the subsection Message Switching (Nachricht Senden) in the Entire Operations User´s Guide.

Possible Errors

- Migration Considerations
- If NOP Monitor Subtask Does Not Start

- You have forgotten to use some Natural Security definitions.
- You might be using improper versions of Adabas, Natural or Entire System Server.
- There are errors in your Natural definition (linkage, parameter module, etc.).
- You have forgotten some System Automation Tools parameters or have defined them incorrectly.
- You have not performed the installation procedure correctly or have not ended it properly.

Migration Considerations

- **Sample Networks for Previous Versions 1.4.x**
  In general, the installation verification can also be carried out using the sample networks delivered with previous versions 1.4.x of Entire Operations. However, these network definitions contained some minor inconsistencies which have been corrected in the current version. The current version also contains some additional sample network definitions, in particular those demonstrating access to UNIX nodes. It is therefore recommended that you update the sample networks by importing them from the DATA file supplied with Entire Operations Version 2.1.1 and above. For further information, see the subsection Import and Export of Entire Operations Data.
- **Sample Networks for Previous Versions 1.3.x**
  Similar considerations apply for the sample networks supplied with Entire Operations Version 1.3.x. However, in this case you are advised to proceed as described in the subsection Import and Export of Entire Operations Data.

If NOP Monitor Subtask Does Not Start

Error NAT0838

If you receive the error message NAT0838 in the System Automation Tools output:

- Log on online to SYSEOR and change the password there.
- Modify the NSCPSWD= settings in NOPxxx SATENV in the System Automation Tools parameters as well.
- Retry the System Automation Tools start.

Import and Export of NOP Data

Starting with version 1.4.1, an Import / Export Utility is provided by Entire Operations. It can be used to transfer Entire Operations data (networks, jobs and all other objects) from one System File to another by exporting and importing the data via a work file.

Updating Sample Networks

The Import / Export Utility can also be used to update sample network definitions supplied with previous Entire Operations versions by importing the definitions contained in the system file supplied with Versions below 3.2.1. **Step 3** below describes what must be done for this purpose.

The Import / Export Utility is described in detail in the section Import/Export Utility of this documentation.

Importing updated sample networks (optional)
This step is recommended when migrating from any previous version of Entire Operations. It can also be useful for backing out modifications made to sample network definitions, or for loading the sample networks into your system file, if your Entire Operations System Files were initially loaded with NUMREC=0.

1. Assign the Natural Workfile **1** to the NOPnnn.DATA file and invoke the Import Utility to load the sample networks. This can be done online in a TIAM (BS2000/OSD) or TSO (OS/390) Natural environment, or preferably in batch mode as described in the subsections Using the Import / Export Utility in Batch Mode and Import in the section Import/Export Utility.
2. If you intend to update the sample network B60-FLOW, you are recommended to delete this network manually from the Entire Operations NETWORK maintenance screen prior to the steps following below. You can omit this deletion step if you do not use BS2000/OSD functionality, or if you have defined your own jobs within network B60-FLOW.
3. Use the Initial Mode **A** to load some new sample networks, especially demonstrating access to UNIX nodes, and/or use the Initial Mode **U** to update existing examples belonging to the owner EXAMPLE. In either case, you are advised to set the parameters ERROR LIMIT and WARNING LIMIT to 9999. See Job I200, Step 2105. This is only necessary if this is a first-time installation and not an update.

NOP in Client/Server Environments

This subsection covers the following topics:

- Accessing UNIX/Windows Machine from Mainframe
- General Prerequisites
- Required Parameter Definitions
- Example Scenario

Accessing UNIX/Windows Machine from Mainframe

With Version 2.1.1, Entire Operations can be run in mixed mainframe/UNIX or, from Version 3.1.1 onwards, in Windows environments.

To access a UNIX or Windows machine from mainframe

- You must define services and nodes on both mainframe and UNIX or Windows systems.

  For information on defining UNIX or Windows nodes within Entire Operations, see the subsection UNIX and Windows Node Definitions. This describes where to define corresponding services and Entire Broker parameters.

General Prerequisites

Make sure that the following INCLUDE statement has been added to the linkage of the Natural batch/subtask module (see also Step 4: Link a Natural Subtask/Batch Module in the SAT Documentation):

- INCLUDE ETBLIB(NATETB)

Required Parameter Definitions

In order for you to work with Entire System Server nodes on UNIX and Windows, the following definitions must be present:

- On the platform where the Entire Operations online system and monitor are running - in the Natural member SATSRV in the SYSSATU library:

Definition	Comment
BROKER-ID=	
SERVER-CLASS=NPR	(must be NPR)
SERVER-NAME=	(in upper case)
SERVICE=<service>	(in lower case)

  For more information on SATSRV, see the heading SATSRV Parameters in the subsection SAT in Client/Server Environments of the SAT Documentation.

- For Entire Broker, in the attribute file:

Definition	Comment
BROKER-ID=	
CLASS=NPR	(must be NPR)
SERVER=	(in upper case)
SERVICE=<service>	(in lower case)

These definitions must be created on the platform where the Entire Broker is installed (either mainframe or UNIX or Windows). For more information on the customization of the Entire Broker attribute file, see Step 4.

- For the file **npr.ini**, located on the UNIX or Windows system being addressed:
  - the same values as for Natural, above, are used;
  - the service name <service> is written within angle brackets. The attributes follow this.

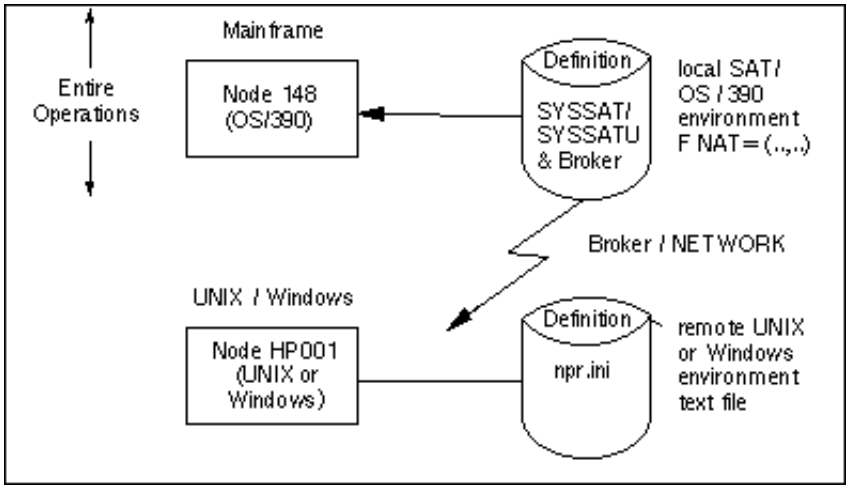
  Definition of the Entire System Server/UNIX or Windows initialization file **npr.ini** is described in Step 4: Customize the NPR Server.

- On the UNIX or Windows system being addressed, the Entire System Server must be active.

  UNIX:
  To activate it, start **nprmgr**, then enter the command **start service <service>**. For details, see the subsection Starting the Server of a UNIX Service.
  Windows:
  To activate it, choose Control Panel (Systemsteuerung). Then choose Services (Dienste). Then choose Entire System Server (standard) or Entire System Server (with R/3).

Example Scenario

- Mainframe Definitions for this Example
- Middleware Definitions for this Example
- Server Definitions



Mainframe Definitions for this Example

SYSSATU/SATSRV

In the member SATSRV in the library SYSSATU, a section must exist starting with:

```
<node name> SATSRV   TYPE=ACI
```

In this line, <node name> must be replaced by the identifier specified in the corresponding field when defining the node within Entire Operations (see field Node Name). The required definitions for the above example would be read as follows:

```
demonode SATSRV   TYPE=ACI
                  BROKER-ID= BKR034
                  SERVER-NAME= HP001
                  SERVER-CLASS= NPR
                  SERVICE= nprdemo
.
.
```

Middleware Definitions for this Example

These definitions apply either to mainframe or UNIX or Windows.

Entire Broker Attribute File

The following is an example for Entire Operations with:

```
SERVER   = HP001
CLASS    = NPR
SERVICE  = nprdemo
.
.
```

Server Definitions

The following definitions in the file **npr.ini** apply to a UNIX or Windows system.
They are required for the example above:

```
[nprdemo]
```

```
Local_node             = HP001
Integration_Mechanism  = ETB,BKR034
                .
                .
```


Installing Updates

If an update for Entire Operations is to be installed, do the following:

1. Ensure that the Entire Operations Monitor is not active and that online users have logged off. Otherwise, data can be lost or corrupted.
2. Copy the update completely to the affected target libraries. Verify this.
3. When the new modules are in place, purge the Natural buffer pool for online and/or monitor usage.
4. In the Entire Operations main menu, enter the direct command "TECH". The version information is displayed and updated for monitor usage.

The monitor error transaction is able to detect a version mix if a runtime error occurs. In this case, all monitor tasks will immediately be terminated with an error message.

Naming Conventions for Work Files

This subsection applies to work files created by Entire Operations. It covers the following topics:

- Introduction
- BS2000/OSD
- UNIX
- Windows
- File Name Generation Exit

Introduction

Entire Operations creates its own work files if jobs are executed on one of the following operating systems:

- BS2000/OSD
- UNIX
- Windows

Work files are deleted automatically by the Entire Operations monitor during the cleanup of active job networks.

BS2000/OSD

- Work File Extensions
- Special Work File Names

BS2000/OSD work files are created with the following names:

```
:catid:$sysout-userid.owner.network.run.job#suffix
```

Variable	Explanation
catid	BS2000/OSD catalog ID for the file.
sysout userid	BS2000/OSD user ID, under which the file is created. If a sysout user ID (see Entire Operations User´s Guide, Job Maintenance, Operating-System-Dependent Job Definitions) has been defined, then it will be used.
owner	Entire Operations owner of network.
network	Entire Operations network.
run	Entire Operations run number (with network). Run numbers from **1** to **9999** are filled up to contain **4** digits with leading zeros. For run numbers containing **5 digits**, the dot between run number and job name will be omitted for reasons of space.
job	Name of the job. If a suffix follows, then the field will be filled up to a length of **10** characters using the hash character ("#").
suffix	Suffix to clearly distinguish between several work files of a job.

Work File Extensions

Extension	Explanation
None	Current sysout file.
1 through 9	Previous sysout files.
E	Temporary Enter file. Will be deleted after job submission.
M	Monitor job variable.
A through Z, apart from E, M	Sysout file copies which are to be passed to Entire Output Management.

Note:
The maximum file length in BS2000/OSD is **54**.

Special Work File Names

BS2000/OSD temporary print files are created with the following names:

```
:catid:$BS2000/OSD-uid.EOR.PRINT.node.date.time
```

Variable	Explanation
catid	BS2000/OSD catalog ID for the file.
BS2000/OSD-uid	BS2000/OSD user ID (submit user ID or sysout user ID).
node	Entire System Server node (3 digits).
date	Current date (YYYYMMDD).
time	Current time (HHMMSS).

UNIX

- UNIX Work File Extensions

All work files created by Entire Operations reside in the directory $EOR_WORK or one of its subdirectories.

The environment variable EOR_WORK is set during the installation of Entire System Server for UNIX. This variable may contain any valid directory name. The default is "$NPDDIR/$NPRVERS/work". See also the subsection Establish the Correct Environment Variables in the section Installing and Setting up Entire System Server on UNIX Platforms.

The directory $EOR_WORK should have the access "drwxrwxrwx" because its subdirectories may belong to various UNIX owners and groups. Ensure that enough space for work file creation is available.

UNIX work files are created with the following names:

```
$EOR_WORK/unix-group/dbid/fnr/owner/network/run/job.ext
```


Variable	Explanation
unix-group	The submit group name of the job. If it is not specified explicitly in the job definition, the UNIX default group of the submit user ID is used.
dbid	Entire Operations System File **1** database ID, from the caller's environment (5 digits).
fnr	Entire Operations System File **1** file number, from the caller's environment (5 digits).
owner	Entire Operations owner of network.
network	Entire Operations network.
run	Entire Operations run number (with leading zeroes).
job	Entire Operations job name.
ext	Extension (see below).

The name of the work directory for an active network is available in the pre-defined symbol P-NADIR. Application-specific work files may be stored there, as long as there are no name conflicts with files generated by Entire Operations.

Work files created by Entire Operations and by the application are deleted during the network or job deactivation by the Entire Operations monitor.

UNIX Work File Extensions

Extension	Explanation
S	Current sysout file.
S01 through S09	Previous sysout files.
B	Shell script which is actually submitted (batch file).
BF	Shell script frame (batch frame).

Notes:

1. Since owner, network and job are defined in upper case within Entire Operations, they also appear in upper case in the generated file names.
2. The access rights of the UNIX work files and of the intermediate directories depend on the UMASK setting of the Entire System Server for UNIX. You may insert a UMASK statement into the Entire System Server for UNIX startup script (for example "startups").

Windows

- Windows Work File Extensions

All work files created by Entire Operations reside in the directory %EOR_WORK% or one of its subdirectories.

The environment variable EOR_WORK is set during the installation of Entire System Server for Windows.

Windows work files are created with the following names:

```
%EOR_WORK%\userid\dbid\fnr\owner\network\run\job.ext
```

Variable	Explanation
Userid	Windows userid (submit userid of the job).
dbid	Entire Operations System File **1** database ID, from the caller's environment (5 digits).
fnr	Entire Operations System File **1** file number, from the caller's environment (5 digits).
owner	Entire Operations owner of network.
network	Entire Operations network.
run	Entire Operations run number (with leading zeroes).
job	Entire Operations job name. For batch frames, a single "#" is appended to the job name.
ext	Extension (see below).

Windows Work File Extensions

Extension	Explanation
*#.BAT	Frame batch file. This frame invokes the executable batch file or a directly executable program.
BAT	Executable batch file
S	Current sysout file.
S01 through S09	Previous sysout files.

Note:
Since owner, network and job are defined in upper case within Entire Operations, they also appear in upper case in the generated file names.

File Name Generation Exit

It is possible to generate work file names using a generic logic (an exit). For this purpose, all generated file names must be unique.

Installing and Setting up SAG Products on UNIX Platforms

This section contains general information which applies when installing and setting up any Software AG product on a UNIX platform. The information contained in this section is independent of hardware type and platform.

The following topics are covered:

- Installation Package
- Writing Conventions
- Performing General Installation and Setup
- SAG Environment

Installation Package

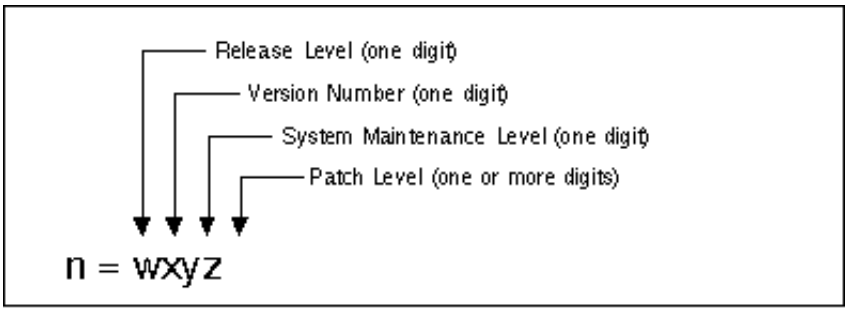
The installation package containing Software AG products is available on cartridge, magnetic tape and other media. For some systems, the installation package is also available on ISO 9660 CD-ROM.

The CD-ROM contains a complete directory structure which clearly indicates product and platform.

For media other than CD-ROM, the installation medium is written in standard cpio format and contains a complete directory structure with all files included.

Writing Conventions

Notation	Description
.profile	Letters in **bold** indicate set strings which cannot be changed, for example commands or certain file names.
`cpio`	Letters in **`courier bold`** indicate that you must enter the information exactly as specified.
<placeholder>	Lower-case letters in *italics* contained in angle brackets (< >) are used to represent variable information which you must supply.
$<environment-variable-name>	An environment variable name preceded by a dollar sign ($) stands for the string **contained** in the environment variable. For example, when the environment variable **SAG** is set to **/usr /SAG**, **$SAG** stands for **/usr /SAG**.
vn	*vn* represents a product version number. *v* is **v** for released versions, **b** for beta test versions and **r** for run-time versions. *n* consists of the following components:



Performing General Installation and Setup

The following is a summary of the steps required to set up the Software AG environment and install Software AG products for UNIX:

- Step 1: Create the administrator's account and group
- Step 2: Back up your current product version
- Step 3: Log in as the user sag
- Step 4: Copy the contents of the distribution medium to disk
- Processing for CD-ROM
- Processing for Other Media - For Example, Cartridges and Video 8mm
- Step 5: Check images
- Step 6: Read the README files
- Step 7: Create the environment file sagenv.new
- Step 8: Modify user profiles
- Step 9: Installation, Configuration and Installation Verification

Assumptions

In this section the following is assumed:

- The account for the administrator of Software AG products is called **sag**.
- The group to which the administrator and all users of Software AG products belong is called **sag**.
- The home directory for the user **sag** is **/usr/SAG**.
- The root directory for Software AG products is **/usr/SAG**.

Note:
For an overview of the directory structure created and the environment variables which are set at installation, see SAG Environment.

Step 1: Create the administrator's account and group

- Examples

You must create one administrator's account and one group for all Software AG products when you install your first Software AG product.

- Define an administrator account to which all of the Software AG products installed at your site belong.

  Since all environment definition files for the products are written in Bourne shell, the Bourne shell is recommended as the login shell for the administrator account. This section assumes that the administrator account is called **sag**.

- Define a group to which the administrator and all users of Software AG products belong.

  This section assumes that this group is also called **sag**.

- Create a login directory for the user **sag**.

Note:
To perform these steps, use an appropriate system administration tool.

Examples

The following is a possible entry in the system file **/etc/group**:

```
sag:*:21:sag
```

The following is a possible entry in the system file **/etc/passwd**:

```
sag::100:21:SAG - Product Administrator:/usr/SAG:/bin/sh
```

The following is a command which creates a login directory for the user **sag**:

```
mkdir /usr/SAG
```

Step 2: Back up your current product version

When you are upgrading a product, it is strongly recommended that you back up your current product version.

- Back up the current version of the product you are installing.

Step 3: Log in as the user sag

This section assumes that the user **sag** is the administrator for Software AG products.

- Log in as the user **sag** (do not log in as **root)**.

Step 4: Copy the contents of the distribution medium to disk

Make sure that the administrator user and group have been created and defined.

Processing for CD-ROM

- Use the script CDINST.BSH supplied on the CD-ROM.

  For further information on installing products from CD-ROM see the booklet provided with the CD-ROM.

Processing for Other Media - For Example, Cartridges and Video 8mm

- Example

Note:
The raw device name is specific to the operating system.

- List the contents of the distribution medium by issuing the following system command:

```
cpio -icBvtm < /dev/<raw-device-name>
```

Note for AIX Users:
The BLOCKSIZE parameter for the device used must be set to **0** (variable block size). Use the System Maintenance Interface Tool (SMIT) to do this.

- Start installation by issuing the following system command:

```
cpio -icBvdm < /dev/<raw-device-name>
```

Example

```
cpio -icBvdm < /dev/rmt/0m     (for tape)
cpio -icBvdm < /dev/rct/c3d0s2 (for cartridge)
```

Step 5: Check images

- Ensure that all installed images are owned by the user **sag** and have the group ID **sag**.

Step 6: Read the README files

- If README files are included, read them before proceeding. They may contain modifications to this installation documentation.

Step 7: Create the environment file sagenv.new

- Example

The script SAGINST helps you to create an environment file for the product you are installing. SAGINST generates the environment file **sagenv.new** interactively.

- Start SAGINST by issuing the following command:

  ```
  ./SAGINST
  ```

  SAGINST checks whether the environment variable SAG is set. If SAG is not set, you are asked to confirm or modify the default provided. SAG defines the root directory for all Software AG products (which is also the home directory of the user **sag**). A list of all available products installed in the directory referred to by the path **$**SAG appears.

- Enter the numbers corresponding to the product you are installing and to the products which are prerequisite to the product you are installing. Separate multiple entries with blanks.

  Note:
  Do not select more than one product version for a given product.

  ### Example

  ```
            INSTALL: ENVIRONMENT

  Please choose products for which you want to
  generate the environment file sagenv.new

     1       ada/vn
     2       wcp/vn
     3       nat/vn

  PLEASE SELECT ITEMS : 1 3
  ```

  In this example, items **1** and **3** are selected. A **sagenv.new** file will be created for the products Adabas and Natural.

For further information on prerequisites, see the subsection Prerequisites.

- Press Enter.

  The script generates the file **sagenv.new** with all of the environment variables that are required to use the selected product(s). If **sagenv.new** already exists, it is renamed to **sagenv.old**.

- Review the contents of **sagenv.new** and customize it as necessary.
- Rename **sagenv.new** to another file name (optional).

  In the following examples, it is assumed that the environment file is called **sagenv**.

  Note:
  If you are performing an update installation, just replace the product-specific part of **sagenv.new** in your existing **sagenv** file.

- Ensure that the correct environment is being used by invoking the **sagenv** file with the following command:

```
. ./sagenv
```

  This command sets the environment temporarily for the current session.

Step 8: Modify user profiles

- Enter the following command line in the **.profile** file of each user who will use this environment permanently:

```
. <SAG-root-directory>/sagenv
```

Step 9: Installation, Configuration and Installation Verification

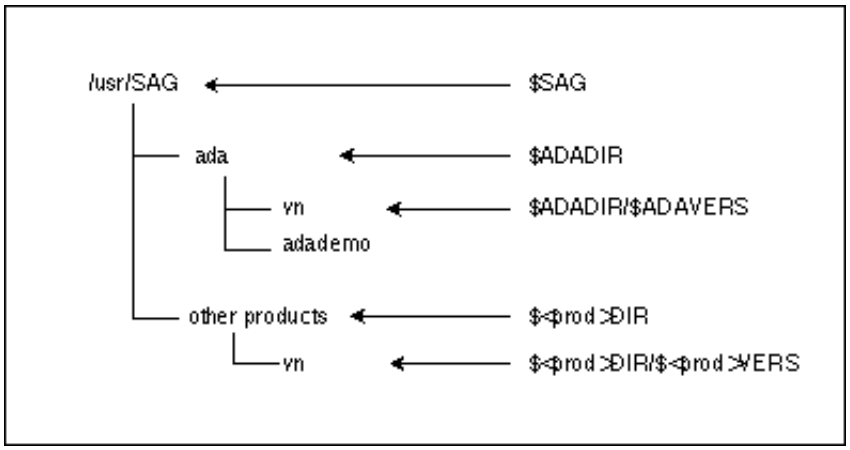
Note:
This verification is product-specific.

You have completed the installation steps common to all Software AG products for UNIX.

Now you must perform product-specific installation, configuration and installation verification as described in the section Installing and Setting up Entire Operations on UNIX Platforms.

SAG Environment

The general directory structure shown in the following figure and the environment variables which reference the specified directories are generated during installation.



The environment variable **SAG** defines the root directory for all Software AG products and is usually the home directory of the administrator account.

For each product, the variable **$<prod>DIR** is set to the path of the main directory of the product specified, where **<prod>** is a three-letter product code in uppercase letters. For example, all files for Adabas, whose product code is ADA, are contained in the directory **$ADADIR**.

```
//   JOB CARD
//V2COPY   EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=A
//IN1      DD DSN=NOPnnn.JOBS,DISP=OLD,UNIT=TAPE,
//            VOL=(,RETAIN,SER=XXXXXX),LABEL=(x,SL)
//OUT1     DD DSN=SAGLIB.NOPnnn.JOBS,DISP=(NEW,CATLG,DELETE),
//            UNIT=SYSDA,VOL=SER=YYYYYY,SPACE=(CYL,(1,1,10))
//SYSIN    DD *
 C I=IN1,O=OUT1
/*
```

The name of the main directory is usually the same as the product code in lowercase letters. For example, the main directory for Adabas is named **ada**. However, there are exceptions to this rule. For example, the product code for Entire Net-Work is WCP but the environment variables use the prefix NET instead. Also, the product code for Predict is PRD but the environment variables use the prefix DIC.

Version-independent parts of the product, such as examples or data, are stored in a subdirectory of the product main directory. For example, all Adabas demo data is contained in the directory $ADADIR/adademo.

Version-dependent components of the product are kept in the version directory $<prod>DIR/$<prod>VERS. For example, the current version of Adabas is stored in the directory $ADADIR/$ADAVERS.

The environment variables $<prod>DIR and $<prod>VERS for all products specified during installation are set in the file **sagenv**. The same applies for any other environment variables needed for the various products.

Installing and Setting up Entire Operations on UNIX Platforms

This subsection covers the following topics:

- Overview
- Prerequisites
- Environment Variables
- Directory Structure
- Main Menu
- Database File Creation
- Loading Sample Networks
- NOP in Distributed Environments
- NOP in Client/Server Environments
- Starting NOP for the First Time
- Notes about the Migration of Log Data to the SAT Log File Format

---

Overview

The installation of Entire Operations consists of the following main steps:

- Unpacking datasets from the **cpio** installation file
- Menu-driven installation

Prerequisites

- **Memory**
  There is no specific memory requirement for operating the product;
- **Disk Space**
  The application SYSEOR requires approximately 20 MB of disk space during operation. At installation time, double the amount should be available;
- **Operating System**
  The UNIX operating system available on the selected platform;
- **Other Software AG Products**
  Natural for UNIX, version 5.1.1 PL 3 and above;
  Adabas for UNIX, version 2.2.3 and above.

Note:
The ADANUC parameter LU must be set to **18000** or above and the ADANUC parameter LS must be set to a value of **20000** (default) or above.

- **Further Requirements:**
  System Automation Tools (SAT) version 3.1.1 or higher;
  Entire System Server for UNIX or Windows (see the section Installing and Setting up Entire System Server on UNIX Platforms and the section Installing and Setting up Entire System Server on Windows Platforms).

- **Optional Software AG Products**
  Entire Net-Work is required for any kind of multi-CPU constellation where remote partners (mainframe and/or UNIX and/or Windows) are involved.
  Entire Broker is required for any kind of multi-CPU constellation, if one partner is a UNIX or Windows

system or different UNIX or Windows systems are involved. Entire Broker is not required, if you are running Entire Operations on a UNIX or Windows platform and controlling the job networks on a mainframe system (see the subsection Platforms and Required Middleware).

Environment Variables

The following environment variables must exist and must point to valid directories:

SAG	Installation directory for Software AG products
ADADIR	Adabas base directory
ADAVERS	Adabas version subdirectory
NATDIR	Natural base directory
NATVERS	Natural version subdirectory

The existence of these directories is checked during the installation.

In addition, the following environment variables must be defined:

NPRDIR	Entire System Server base directory (default: **$SAG/npr**)
NPRVERS	Entire System Server version subdirectory
NOPDIR	Entire Operations base directory (default: **$SAG/nop**)
NOPVERS	Entire Operations version subdirectory

These variables will be temporarily set to their correct values by the installation script. Their setting should be integrated in any **sagenv** file after the installation.

After having copied in the **cpio** installation file, proceed as follows.

Directory Structure

After unpacking the **cpio** installation file, the following Entire Operations directory structure is generated:

SAG				$SAG
	nop			$NOPDIR
		v4111		$NOPVERS
			INSTALL	Installation script directory
			bin	Special executable files for Entire Operations
			example	Sample networks and their JCL

The following table outlines the contents of the Entire Operations version directories.

$NOPDIR/$NOPVERS Directory

Directory	Explanation
INSTALL	Directory containing the shell scripts and other files to be used during the installation of Entire Operations.
bin	This directory contains several scripts and other files necessary to install Entire Operations. These scripts are invoked internally from "nopinstall.bsh" (see Main Menu). Do not use them standalone.
example	This directory contains several text files: **example.imp** contains all sample networks in Import/Export external format. The files **x60-flow.imp**, **b60-flow.imp**, **e60-flow.imp** and **v60-flow.imp** each contain only one sample network definition, demonstrating how jobs in UNIX, BS2000/OSD, OS/390 and VSE/ESA environments (respectively) can be controlled.

File	Explanation
inpl.sag	Input file for the Natural INPL. Used during installation only.

Main Menu

Loading the **cpio** file:

```
cd $SAG
cpio -icvdBm <nopv4111.cpio
```

The directory structure for Entire Operations will be created.

To invoke the installation menu

- Use **setup.ux**

  The graphical installation frontend will be started.

Database File Creation

The database file creation is part of the menu-driven installation procedure. Follow the instructions on the screen.

Loading Sample Networks

The data for the sample networks of Entire Operations are contained in the directory $NOPDIR/$NOPVERS/example. Before proceeding, ensure that you have completed the installation of System Automation Tools (SAT) as described in the separate SAT Documentation.

Import the definitions of one sample network necessary for verification from the file **x60-flow.imp**. This file has standard ASCII format and must be assigned to Natural Workfile 1 using the appropriate Natural parameter module. For information on the Import/Export utility, see the Utilities Documentation.

Note:
You could, alternatively, import all sample network definitions from the file **example.imp**. However, this would take considerably longer and only a few examples are designed for UNIX environments. Though the other examples in the example file help you understand some functions, they must be adapted before they can be used in a UNIX environment.

For more information about installation verification, see the subsection Installation Verification in the section Installing and Setting up Entire Operations on Mainframe Platforms.

NOP in Distributed Environments

This subsection covers the following topics:

- Mixed Environments
- Examples for the Required Service Definitions to Access a UNIX or Windows Node
- Communication with a Mainframe Node

Mixed Environments

With version 3.1.1, Entire Operations can be run in mixed mainframe/UNIX/Windows environments.

The Entire Operations Monitor and the Entire Operations system files may reside on a UNIX machine, the controlled environments on the other hand may run under any mainframe or UNIX or Windows operating system.

Examples for the Required Service Definitions to Access a UNIX or Windows Node

- Definitions for Node Where NOP Resides
- Definitions for Controlled Environments - UNIX

Definitions for Node Where NOP Resides

SYSSATU/SATSRV

The customization of SYSSATU/SATSRV is described in the subsection Customizing the SATSRV Text Member in the separate SAT Documentation. The following is an example for Entire Operations with:

```
nprdemo       SATSRV   TYPE=ACI
                       BROKER-ID          = BKR034
                       SERVER-NAME    = HP001
                       SERVER-CLASS   = NPR
                       SERVICE            = nprdemo
.
.
```

Entire Broker

The customization of Entire Broker is described in Step 2: Customize Entire Broker in the section Installing and Setting up Entire System Server on UNIX Platforms. The following is an example for Entire Operations with:

```
SERVER   = HP001
CLASS    = NPR
SERVICE  = nprdemo
.
.
```

Definitions for Controlled Environments - UNIX

Definition of the Entire System Server/UNIX initialization file **npr.ini** is described in Step 4: Customize the NPR Server in the section Installing and Setting up Entire System Server on UNIX Platforms. The following is an example for Entire Operations (see BS2000/OSD Work File Extensions) with:

```
[nprdemo]

Local_node            = HP001
Integration_Mechanism = ETB,BKR034
.
.
```

Communication with a Mainframe Node

None of the above definitions are required to access mainframe resources and jobs via Entire System Server. There are only three prerequisites for this type of remote access:

1. The desired Entire System Server node must be accessible via Entire Net-Work.
2. The desired Entire System Server node on the mainframe must be version 2.1.2 or above. If this node is running in a BS2000/OSD environment, zap XC21044 (problem tape XC12P1) is also required.

NOP in Client/Server Environments

This subsection covers the following topics:

- Mixed Environments
- General Prerequisites
- Examples

Mixed Environments

Since version 3.1.1, Entire Operations can be run in mixed mainframe/UNIX/Windows environments. To access a UNIX machine or a Windows PC from the mainframe, you must define services and nodes on both the mainframe and the UNIX/Windows systems.

For a description of how to define UNIX and Windows nodes in Entire Operations, see the section System Administrator Services, subsection UNIX and Windows Node Definitions.

General Prerequisites

The following INCLUDE statement must be added to the linkage of the Natural Batch/Subtask module:
INCLUDE ETBLIB (NATETB)

Examples

- Definitions for Mainframe Node Where NOP Resides
- Definitions on UNIX or Windows Node

Definitions for Mainframe Node Where NOP Resides

The customization of SYSSATU/SATSRV is described in the subsection Customizing the SATSRV Text Member in the separate SAT Documentation. The following is an example for Entire Operations with:

```
nprdemo      SATSRV   TYPE=ACI
                      BROKER-ID     = BKR034
                      SERVER-NAME   = HP001
                      SERVER-CLASS  = NPR
                      SERVICE       = nprdemo
.
.
```

Definitions on UNIX or Windows Node

The customization of the initialization file **npr.ini** is described in Setting up Entire System Server Components, Step 4: Customize the NPR Server in the section Installing and Setting up Entire System Server on UNIX Platforms. The following is an example for Entire Operations with:


```
[nprdemo]

Local_node              = HP001
Integration Mechanism   = ETB, BKR034
.
.
```


Starting NOP for the First Time

Before starting Entire Operations, ensure that the following have been installed:

- System Automation Tools (SAT), please refer to the separate SAT Documentation;
- Entire System Server as described in the section Installing and Setting up Entire System Server on UNIX Platforms of this documentation.

Then proceed as described in the corresponding subsection Starting Entire Operations for the First Time of the section Installing and Setting up Entire Operations on Mainframe Platforms.

Performance Considerations

This section covers the following topics:

- Overview
- Entire System Server
- Natural
- Adabas
- Entire Operations

Overview

The Entire Operations system is based on Adabas, Natural and the Entire System Server (previously Natural Process). Therefore, the following performance considerations can be dedicated to these components or to Entire Operations itself:

Entire System Server

If the Entire Operations Monitor runs as a subtask of the Entire System Server, the startup parameters BPSIZE and BPDIRS specify the size of Natural buffer pool. The more space and directory entries that are available in this buffer pool, the fewer the Adabas calls that are made to load Natural objects used by the Monitor.

Natural

- If the Monitor runs as a separate batch job or task, the same as mentioned under Entire System Server applies for the Natural batch buffer pool.
- Define the necessary Editor Buffer Pools large enough to avoid swapping to the EDTWORK dataset. For further information on Editor Buffer Pools, please refer to the Installation Notes .

Adabas

- Use LFIOP with Adabas 5.2.

Check the Adabas statistics for pools filling up, number of throwbacks, number of format overwrites and thread use, and adjust the necessary parameters.

Increase the Adabas buffer LBP to enhance the ratio between the number of Adabas calls and the amount of physical IOs necessary for them. Reduce the Adabas WORK IOs by increasing the NSISN parameter (you may also need to increase the LI parameter).

Watch the usage of the Entire Operations system file(-s) carefully:

- On which disks are the components of these files (AC,UI/NI/MI,DS) located?
- How fast do these devices respond to IO-requests?
- What about the parameters ISN-reusage and DS-reusage?

Spread ASSO and DATA across approximately as many disk devices as there are Adabas threads active. WORK and PLOG should be on separate disk devices.

Use LFIOP with Adabas 5.2

Reorder the Entire Operations system file(-s) physically and do this on a regular basis. This puts the records in ISN sequence and accelerates the process of some often-used read processes.

Be aware that the Entire Operations Monitor is working with WH=ON. If an Adabas record in the Entire Operations' system file(-s) is held by an online user and the Monitor has to update it, he has to wait for the release of that sentence. In such a situation, check for the contents of the Adabas hold queue for entries pointing to the system files. Adjust Adabas time parameters TNAx and TT to release resources even for those users who are gone.

Entire Operations

- Separate Log File
- Monitor Interval
- Monitor Tasks
- Networks
- Job Location
- Activation
- Earliest Start Time
- Input Condition Checking
- Input Condition References
- End-of-Job Checking
- Symbol Substitution

Separate Log File

Starting with Version 141, Entire Operations uses a separate physical system file in Adabas for storing the LOG records. This will separate the more static data (definitions and profiles) from the data which is highly dependent on the workload of the Entire Operations system (active objects and log data). You will then have the ability to monitor each file separately.

Monitor Interval

Adjust the Entire Operations Monitor wait interval as necessary.

Example 1

During the online daytime you may only need to have it activating every few minutes, if there are not too many jobs to be executed.

Example 2

If most of your batch jobs are big ones, increase the Monitor wait time as well. You can even change this wait interval by a using a defined API within a Natural program and invoke this program by using Entire Operations itself.

Monitor Tasks

To keep system overhead for administration of the individual Monitor tasks within reasonable limits, you should not distribute the Monitor among too many unnecessary tasks. The recommended number is **2** to **4** tasks. For the recommended distribution, see the subsection Monitor Task Profile in the section System Administrator Services of this documentation.

Networks

Instead of complex networks with many jobs, use sub-networks. These sub-networks can be activated by the end-of-job action of a job in the calling network. The wait queues decrease and activation is performed, only if all necessary conditions are fulfilled.

Job Location

Use Natural libraries instead of other JCL media. This decreases the number of requests to the Entire System Server. In addition, you can control total access to these JCL members with Natural Security.

Activation

Try to keep the time the networks are in the active queue as short as possible, i.e. activate the networks close to their submission time. The number of conditions to be checked by the Monitor decreases.

Earliest Start Time

Specify an earliest start-time for each network, if possible. Conditions are checked only after that time. Otherwise, the network is activated at midnight (the beginning of the schedule day).

Input Condition Checking

Any special actions during input condition checking are convenient, but may produce overhead. Among them are:

- input conditions dependent on files, job variables, etc.
- input condition user routines, which make excessive Adabas or calls.

Avoid the redundant checking of such conditions. It is much more efficient to let dummy jobs wait for such conditions, which are predecessors of several other jobs.

Input Condition References

Wherever possible, avoid using input condition references other than RUN, because these cause a condition check within a time interval, and this is less efficient than a direct RUN check.

Note:
RUN checks are not applicable, if you need an inter-network connection.

End-of-Job Checking

Each defined check costs performance time, so reduce the end-of-job checks to the necessary minimum. In particular, avoid complex end-of-job actions on the SYSOUT protocol.

Symbol Substitution

In complex productions with often-used JCL skeletons, avoid too much symbol substitution: for example, just assume that a job with **100** symbols is used **500** times a day! Be sure that the use of all parameters is necessary.

Sample Network

This section covers the following topic:

- Network E60-FLOW in External Format

Network E60-FLOW in External Format

```
*
OBJECT=NETWORK-MASTER
* DATE: 19980818 TIME: 16:05:30 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
SHDESC=Job Flow, MVS
LAST-RUN=1861
LAST-ACT=19980818101438
LAST-SCH-XT=19980818151343
EXTRACTED-UNTIL=19980822235959
LAST-SUBMIT-RUN=1858
DEF-EX-NODE=146
DEF-JCL-NODE=148
DEF-JCL-LOCATION=NAT
DEF-FILE=EOR-T212
DEF-SYMBOL-TABLE=EXAM-ST1
SYMTAB-ACTIVATION-MOD=X
LATEST-START=150000
DEADLINE=170000
MSG-RECEIVER
MSG-RCV-TYPE=U MSG-RCV-NAME=SN  MSG-RCV-NODE=146
EXPL-DATE EXPL-DAY=19921221 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19930228
EXPL-DATE EXPL-DAY=19930521 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19930714
EXPL-DATE EXPL-DAY=19930811
EXPL-DATE EXPL-DAY=19931122 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19940404 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19940405 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19940530 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19941101 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19960308 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19960523 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19960708 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19971213
EXPL-DATE EXPL-DAY=19971215 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19011010
EXPL-DATE EXPL-DAY=19980821 EXPL-FLAG=-
HIST-DAY=19980701
HIST-DAY=19980702
HIST-DAY=19980703
HIST-DAY=19980707
HIST-DAY=19980709
HIST-DAY=19980710
HIST-DAY=19980714
HIST-DAY=19980716
HIST-DAY=19980717
HIST-DAY=19980721
HIST-DAY=19980723
HIST-DAY=19980724
HIST-DAY=19980728
HIST-DAY=19980801
HIST-DAY=19980804
HIST-DAY=19980807
HIST-DAY=19980811
HIST-DAY=19980813
HIST-DAY=19980814
HIST-DAY=19980818
GRANT GRANT-TYPE=U GRANT-NAME=SN GRANT-FLAGS=O
```



```
GRANT GRANT-TYPE=O GRANT-NAME=EXAMPLE GRANT-FLAGS=OR
GRANT GRANT-TYPE=U GRANT-NAME=RW GRANT-FLAGS=R
GRANT GRANT-TYPE=U GRANT-NAME=GFR GRANT-FLAGS=O
MOD-USER=SN MOD-TIME=19980818151331
END-OBJECT /* NETWORK-MASTER E60-FLOW ( 295 LINES )
*
OBJECT=DESCRIPTION
* DATE: 19980818 TIME: 16:05:32 USER: GFR
TYPE=NETWORK
OWNER=EXAMPLE
NETWORK=E60-FLOW
T=Network E60-FLOW
T=----------------
T=This Network is just an example of ’standard’ job flow for
T=a bigger amount of jobs.
T=
T=The jobs are all defined with the Dynamic JCL Facility to allow
T=an easy migration to another environment.
T=No special end-of-job handling is defined, so that the Natural
T=OPERATIONS global defaults will be used.
T=
T=Flow Diagram
T=------------
T=
T=                              JOB-01
T=                         +--------+--------+
T=                         V                 V
T=                      JOB-012           JOB-019
T=                         V                 !
T=                      JOB-013              !
T=                         V                 !
T=                      JOB-014              !
T=                         V                 !
T=                      JOB-015              !
T=                         +--------+--------+
T=                              JOB-02
T=                                V
T=                              JOB-03
T=                                V
T=                              JOB-04
T=                                V
T=                              JOB-05
T=                                V
T=                              JOB-06
END-OBJECT /* DESCRIPTION E60-FLOW ( 39 LINES )
*
OBJECT=SCHEDULE
* DATE: 19980818 TIME: 16:05:33 USER: GFR
OWNER=EXAMPLE
SCHEDULE=E60-FLOW
CALENDAR=EXAMPLECAL
M-MONTH=1
M-MONTH=2
M-MONTH=3
M-MONTH=4
M-MONTH=5
M-MONTH=6
M-MONTH=7
M-MONTH=8
M-MONTH=9
M-MONTH=10
M-MONTH=11
```



```
M-MONTH=12
W-MONTH=1
W-MONTH=2
W-MONTH=3
W-MONTH=4
W-MONTH=5
W-MONTH=6
W-MONTH=7
W-MONTH=8
W-MONTH=9
W-MONTH=10
W-MONTH=11
W-MONTH=12
M-DATE M-DAY=01 M-FLAG=A
M-DATE M-DAY=LD M-FLAG=B
W-DATE W-DAY=3 W-FLAG=X
W-DATE W-DAY=5 W-FLAG=A
W-DATE W-DAY=7 W-FLAG=X
W-DATE W-DAY=6 W-FLAG=A
EXPL-DATE EXPL-DAY=19921221 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19930228
EXPL-DATE EXPL-DAY=19930521 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19930714
EXPL-DATE EXPL-DAY=19930811
EXPL-DATE EXPL-DAY=19931122 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19940404 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19940405 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19940530 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19941101 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19960308 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19960523 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19960708 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19971213
EXPL-DATE EXPL-DAY=19971215 EXPL-FLAG=-
EXPL-DATE EXPL-DAY=19011010
EXPL-DATE EXPL-DAY=19980821 EXPL-FLAG=-
MOD-USER=SN MOD-TIME=19980818151331
END-OBJECT /* SCHEDULE E60-FLOW ( 54 LINES )
*
OBJECT=JOB-MASTER
* DATE: 19980818 TIME: 16:05:34 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-01
SHDESC=Where it all starts
JOB-TYPE=MAC
ESC-ACTIVATION=) ESC-SUBMIT=$
SYMBOL-TABLE=EXAM-ST1
JCL-LOCATION=NAT
JCL-FILE=EOR-T212
JCL-MEMBER=E60-M02
JCL-NODE=146 EXECUTION-NODE=146
EARLIEST-START=131400
LATEST-START=010000 LATEST-DAYS-AFTER=1
DEADLINE=020000 DEADLINE-DAYS-AFTER=2
ESTIMATED-ELAPSED-TIME=000500
ELAPSED-TIME=000101
ELAPSED-TIME=000101
ELAPSED-TIME=000101
ELAPSED-TIME=000102
ELAPSED-TIME=000101
ELAPSED-TIME=000101
```



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ELAPSED-TIME=000101
ELAPSED-TIME=000102
ELAPSED-TIME=000102
ELAPSED-TIME=000110
ELAPSED-TIME=000101
ELAPSED-TIME=000102
ELAPSED-TIME=000102
ELAPSED-TIME=000101
ELAPSED-TIME=000101
ELAPSED-TIME=000102
ELAPSED-TIME=000101
ELAPSED-TIME=000107
ELAPSED-TIME=000102
ELAPSED-TIME=000103
MOD-USER=SN MOD-TIME=19980727135818
END-OBJECT /* JOB-MASTER JOB-01 ( 39 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:34 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-01
EVENT-NAME=JOB-OK
OUT-CONDITION-P
OUT-CONDITION=E60-JOB1-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=A
MOD-USER=GHH MOD-TIME=19951103135542
END-OBJECT /* EOJ-CHECK-MASTER JOB-01 ( 10 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:34 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-01
EVENT-NAME=JOB-NOTOK
SYSOUT-ACTION=O
RCV-OWNER=EXAMPLE
RCV-NETWORK=NET-1
RCV-JOB=JOB-1
RCV-LIMIT=2
RCV-RESCHEDULE=YES
RCV-WAIT-TIME=5
MOD-USER=GFR MOD-TIME=19941005102039
END-OBJECT /* EOJ-CHECK-MASTER JOB-01 ( 15 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:35 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-01
EVENT-NAME=STEP01
CODE=C
VALUE=0008
OP=<=
OK=OK
MOD-USER=SN MOD-TIME=19940721171249
END-OBJECT /* EOJ-CHECK-MASTER JOB-01 ( 12 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:35 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-01
```



```
EVENT-NAME=ANYSTEP
CODE=C
VALUE=0008
OP=>=
OK=NO
END-OBJECT /* EOJ-CHECK-MASTER JOB-01 ( 11 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:35 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-01
EVENT-NAME=INVALID RESPONSE-CODE
CODE=STR
OK=NO
END-OBJECT /* EOJ-CHECK-MASTER JOB-01 ( 9 LINES )
*
OBJECT=JOB-MASTER
* DATE: 19980818 TIME: 16:05:35 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-015
SHDESC=Depending on JOB-014
JOB-TYPE=DUM
ESC-ACTIVATION=) ESC-SUBMIT=$
JCL-NODE=148 EXECUTION-NODE=146
ELAPSED-TIME=000002
ELAPSED-TIME=000002
ELAPSED-TIME=000002
ELAPSED-TIME=000002
ELAPSED-TIME=000002
ELAPSED-TIME=000002
ELAPSED-TIME=000002
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ELAPSED-TIME=000002
ELAPSED-TIME=000002
ELAPSED-TIME=000002
ELAPSED-TIME=000002
ELAPSED-TIME=000002
MOD-USER=SN MOD-TIME=19921106143229
IN-COND-DEF
IN-CONDITION=E60-J014-O IN-REFERENCE=RUN
END-OBJECT /* JOB-MASTER JOB-015 ( 33 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:36 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-015
EVENT-NAME=JOB-OK
OUT-CONDITION-P
OUT-CONDITION=E60-J014-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=D
OUT-CONDITION-P
OUT-CONDITION=E60-J015-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=A
END-OBJECT /* EOJ-CHECK-MASTER JOB-015 ( 11 LINES )
```



```
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:36 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-015
EVENT-NAME=JOB-NOTOK
SYSOUT-ACTION=O
MOD-USER=SN1 MOD-TIME=19950626125008 CREATION-TIME=19950626125008
END-OBJECT /* EOJ-CHECK-MASTER JOB-015 ( 9 LINES )
*
OBJECT=JOB-MASTER
* DATE: 19980818 TIME: 16:05:36 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-02
SHDESC=Dep. JOB-15, JOB-19
JOB-TYPE=MAC
SYMBOL-TABLE=EXAM-ST1
JCL-LOCATION=NAT
JCL-FILE=EOR-T212
JCL-MEMBER=E60-M02
JCL-NODE=148 EXECUTION-NODE=146
EARLIEST-START=100500
ESTIMATED-ELAPSED-TIME=000400
ELAPSED-TIME=000101
ELAPSED-TIME=000101
ELAPSED-TIME=000101
ELAPSED-TIME=000100
ELAPSED-TIME=000102
ELAPSED-TIME=000101
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ELAPSED-TIME=000102
ELAPSED-TIME=000102
ELAPSED-TIME=000103
ELAPSED-TIME=000101
ELAPSED-TIME=000102
ELAPSED-TIME=000102
ELAPSED-TIME=000102
ELAPSED-TIME=000106
ELAPSED-TIME=000102
ELAPSED-TIME=000103
ELAPSED-TIME=000102
ELAPSED-TIME=000103
ELAPSED-TIME=000102
MOD-USER=SN MOD-TIME=19960719114759
IN-COND-DEF
IN-CONDITION=E60-J015-O IN-REFERENCE=RUN
IN-EXIST=Y
IN-COND-DEF
IN-CONDITION=E60-J019-O IN-REFERENCE=RUN
IN-EXIST=Y
END-OBJECT /* JOB-MASTER JOB-02 ( 42 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:37 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-02
EVENT-NAME=JOB-OK
OUT-CONDITION-P
OUT-CONDITION=E60-JOB2-O1 OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=A
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OUT-CONDITION-P
OUT-CONDITION=E60-JOB2-O2 OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=A
OUT-CONDITION-P
OUT-CONDITION=E60-J015-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=D
OUT-CONDITION-P
OUT-CONDITION=E60-J019-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=D
OUT-CONDITION-P
OUT-CONDITION=E60-JOB1-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=D
MOD-USER=GHH MOD-TIME=19940719152632
END-OBJECT /* EOJ-CHECK-MASTER JOB-02 ( 18 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:37 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-02
EVENT-NAME=JOB-NOTOK
SYSOUT-ACTION=O
END-OBJECT /* EOJ-CHECK-MASTER JOB-02 ( 8 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:37 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-02
EVENT-NAME=STEP1
CODE=C
VALUE=0000
OP==
OK=OK
MOD-USER=GHH MOD-TIME=19940719173134
END-OBJECT /* EOJ-CHECK-MASTER JOB-02 ( 12 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:38 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-02
EVENT-NAME=Bibliothek voll
CODE=STR
OK=NO
MOD-USER=GHH MOD-TIME=19931005163320 CREATION-TIME=19931005163316
END-OBJECT /* EOJ-CHECK-MASTER JOB-02 ( 10 LINES )
*
OBJECT=JOB-MASTER
* DATE: 19980818 TIME: 16:05:38 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-012
SHDESC=Depending on Job-01
JOB-TYPE=MAC
ESC-ACTIVATION=) ESC-SUBMIT=$
SYMBOL-TABLE=EXAM-ST1
JCL-LOCATION=NAT
JCL-FILE=EOR-T212
JCL-MEMBER=E60-M01
JCL-NODE=148 EXECUTION-NODE=146
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000200
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ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000201
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ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000201
ELAPSED-TIME=000200
ELAPSED-TIME=000200
MOD-USER=SN MOD-TIME=19951020160544
IN-COND-DEF
IN-CONDITION=E60-JOB1-O IN-REFERENCE=RUN
IN-EXIST=Y
END-OBJECT /* JOB-MASTER JOB-012 ( 38 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:38 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-012
EVENT-NAME=JOB-OK
OUT-CONDITION-P
OUT-CONDITION=E60-J012-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=A
END-OBJECT /* EOJ-CHECK-MASTER JOB-012 ( 9 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:39 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-012
EVENT-NAME=JOB-NOTOK
SYSOUT-ACTION=O
MOD-USER=SN MOD-TIME=19901219110341
END-OBJECT /* EOJ-CHECK-MASTER JOB-012 ( 9 LINES )
*
OBJECT=DESCRIPTION
* DATE: 19980818 TIME: 16:05:39 USER: GFR
TYPE=JOB
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-012
T=Job JOB-MAC
T=-----------
T=JCL is generated with dynamic JCL generation.
END-OBJECT /* DESCRIPTION JOB-012 ( 10 LINES )
*
OBJECT=JOB-MASTER
* DATE: 19980818 TIME: 16:05:39 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-013
SHDESC=Depending on JOB-012
JOB-TYPE=MAC
SYMBOL-TABLE=EXAM-ST1
JCL-LOCATION=NAT
JCL-FILE=EOR-T212
```



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JCL-MEMBER=E60-M01
JCL-NODE=148 EXECUTION-NODE=146
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000201
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000200
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ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000201
ELAPSED-TIME=000201
ELAPSED-TIME=000200
ELAPSED-TIME=000200
MOD-USER=SN MOD-TIME=19920527162718
IN-COND-DEF
IN-CONDITION=E60-J012-O IN-REFERENCE=RUN
END-OBJECT /* JOB-MASTER JOB-013 ( 36 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:40 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-013
EVENT-NAME=JOB-OK
OUT-CONDITION-P
OUT-CONDITION=E60-J013-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=A
OUT-CONDITION-P
OUT-CONDITION=E60-J012-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=D
END-OBJECT /* EOJ-CHECK-MASTER JOB-013 ( 11 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:40 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-013
EVENT-NAME=JOB-NOTOK
SYSOUT-ACTION=O
MOD-USER=SN1 MOD-TIME=19950626125008 CREATION-TIME=19950626125008
END-OBJECT /* EOJ-CHECK-MASTER JOB-013 ( 9 LINES )
*
OBJECT=JOB-MASTER
* DATE: 19980818 TIME: 16:05:40 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-03
SHDESC=Depending on JOB-02
JOB-TYPE=NAT
JCL-LOCATION=NAT
JCL-FILE=EOR-T212
JCL-MEMBER=E60-P01
JCL-NODE=148 EXECUTION-NODE=146
ESTIMATED-ELAPSED-TIME=000200
ELAPSED-TIME=000002
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ELAPSED-TIME=000002
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ELAPSED-TIME=000002
ELAPSED-TIME=000002
MOD-USER=SN1 MOD-TIME=19891202122307
IN-COND-DEF
IN-CONDITION=E60-JOB2-O1 IN-REFERENCE=RUN
END-OBJECT /* JOB-MASTER JOB-03 ( 36 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:41 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-03
EVENT-NAME=JOB-OK
OUT-CONDITION-P
OUT-CONDITION=E60-JOB3-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=A
OUT-CONDITION-P
OUT-CONDITION=E60-JOB2-O1 OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=D
OUT-CONDITION-P
OUT-CONDITION=E60-JOB2-O2 OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=D
END-OBJECT /* EOJ-CHECK-MASTER JOB-03 ( 13 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:41 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-03
EVENT-NAME=JOB-NOTOK
SYSOUT-ACTION=O
MOD-USER=SN1 MOD-TIME=19950626125009 CREATION-TIME=19950626125009
END-OBJECT /* EOJ-CHECK-MASTER JOB-03 ( 9 LINES )
*
OBJECT=JOB-MASTER
* DATE: 19980818 TIME: 16:05:41 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-04
SHDESC=Depending on JOB-03
JOB-TYPE=MAC
SYMBOL-TABLE=EXAM-ST1
JCL-LOCATION=NAT
JCL-FILE=EOR-T212
JCL-MEMBER=E60-M01
JCL-NODE=148 EXECUTION-NODE=146
ESTIMATED-ELAPSED-TIME=000500
ELAPSED-TIME=000200
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ELAPSED-TIME=000200
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ELAPSED-TIME=000200
MOD-USER=SN1 MOD-TIME=19891202122320
IN-COND-DEF
IN-CONDITION=E60-JOB3-O IN-REFERENCE=RUN
END-OBJECT /* JOB-MASTER JOB-04 ( 37 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:42 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-04
EVENT-NAME=JOB-OK
OUT-CONDITION-P
OUT-CONDITION=E60-JOB4-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=A
OUT-CONDITION-P
OUT-CONDITION=E60-JOB3-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=D
END-OBJECT /* EOJ-CHECK-MASTER JOB-04 ( 11 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:42 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-04
EVENT-NAME=JOB-NOTOK
SYSOUT-ACTION=O
MOD-USER=SN1 MOD-TIME=19950626125009 CREATION-TIME=19950626125009
END-OBJECT /* EOJ-CHECK-MASTER JOB-04 ( 9 LINES )
*
OBJECT=JOB-MASTER
* DATE: 19980818 TIME: 16:05:42 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-05
SHDESC=Depending on JOB-04
JOB-TYPE=DUM
JCL-NODE=148 EXECUTION-NODE=146
ELAPSED-TIME=000002
ELAPSED-TIME=000002
ELAPSED-TIME=000002
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ELAPSED-TIME=000002
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ELAPSED-TIME=000002
ELAPSED-TIME=000002
MOD-USER=SN1 MOD-TIME=19891202122334
IN-COND-DEF
IN-CONDITION=E60-JOB4-O IN-REFERENCE=RUN
END-OBJECT /* JOB-MASTER JOB-05 ( 32 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:43 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-05
EVENT-NAME=JOB-OK
OUT-CONDITION-P
OUT-CONDITION=E60-JOB3-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=D
OUT-CONDITION-P
OUT-CONDITION=E60-JOB5-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=A
OUT-CONDITION-P
OUT-CONDITION=E60-JOB4-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=D
END-OBJECT /* EOJ-CHECK-MASTER JOB-05 ( 13 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:43 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-05
EVENT-NAME=JOB-NOTOK
SYSOUT-ACTION=O
MOD-USER=SN1 MOD-TIME=19950626125009 CREATION-TIME=19950626125009
END-OBJECT /* EOJ-CHECK-MASTER JOB-05 ( 9 LINES )
*
OBJECT=JOB-MASTER
* DATE: 19980818 TIME: 16:05:43 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-06
SHDESC=Where it all ends
JOB-TYPE=MAC
SYMBOL-TABLE=EXAM-ST1
JCL-LOCATION=NAT
JCL-FILE=EOR-T212
JCL-MEMBER=E60-M02
JCL-NODE=148 EXECUTION-NODE=146
EARLIEST-START=103000
ESTIMATED-ELAPSED-TIME=000300
ELAPSED-TIME=000101
ELAPSED-TIME=000101
ELAPSED-TIME=000101
ELAPSED-TIME=000101
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ELAPSED-TIME=000101
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ELAPSED-TIME=000101
ELAPSED-TIME=000102
ELAPSED-TIME=000102
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ELAPSED-TIME=000102
ELAPSED-TIME=000103
ELAPSED-TIME=000108
ELAPSED-TIME=000102
ELAPSED-TIME=000102
ELAPSED-TIME=000102
ELAPSED-TIME=000105
ELAPSED-TIME=000102
MOD-USER=SN1 MOD-TIME=19891202122121
IN-COND-DEF
IN-CONDITION=E60-JOB5-O IN-REFERENCE=RUN
END-OBJECT /* JOB-MASTER JOB-06 ( 38 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:44 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-06
EVENT-NAME=JOB-OK
OUT-CONDITION-P
OUT-CONDITION=E60-JOB5-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=D
MOD-USER=SN MOD-TIME=19931101131533
END-OBJECT /* EOJ-CHECK-MASTER JOB-06 ( 10 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:44 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-06
EVENT-NAME=JOB-NOTOK
SYSOUT-ACTION=O
MOD-USER=SN1 MOD-TIME=19950626125009 CREATION-TIME=19950626125009
END-OBJECT /* EOJ-CHECK-MASTER JOB-06 ( 9 LINES )
*
OBJECT=JOB-MASTER
* DATE: 19980818 TIME: 16:05:44 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-014
SHDESC=Depending on JOB-013
JOB-TYPE=MAC
SYMBOL-TABLE=EXAM-ST1
JCL-LOCATION=NAT
JCL-FILE=EOR-T212
JCL-MEMBER=E60-M01
JCL-NODE=148 EXECUTION-NODE=146
ELAPSED-TIME=001201
ELAPSED-TIME=001200
ELAPSED-TIME=001200
ELAPSED-TIME=001200
ELAPSED-TIME=001200
ELAPSED-TIME=001200
ELAPSED-TIME=001200
ELAPSED-TIME=001201
ELAPSED-TIME=001200
ELAPSED-TIME=001200
ELAPSED-TIME=001201
```



```
ELAPSED-TIME=001201
ELAPSED-TIME=001203
ELAPSED-TIME=001200
ELAPSED-TIME=001202
ELAPSED-TIME=001201
ELAPSED-TIME=001200
ELAPSED-TIME=001200
ELAPSED-TIME=001200
ELAPSED-TIME=001200
MOD-USER=SN1 MOD-TIME=19891202122218
IN-COND-DEF
IN-CONDITION=E60-J013-O IN-REFERENCE=RUN
END-OBJECT /* JOB-MASTER JOB-014 ( 36 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:45 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-014
EVENT-NAME=JOB-OK
OUT-CONDITION-P
OUT-CONDITION=E60-J014-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=A
OUT-CONDITION-P
OUT-CONDITION=E60-J013-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=D
END-OBJECT /* EOJ-CHECK-MASTER JOB-014 ( 11 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:45 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-014
EVENT-NAME=JOB-NOTOK
SYSOUT-ACTION=O
MOD-USER=SN1 MOD-TIME=19950626125008 CREATION-TIME=19950626125008
END-OBJECT /* EOJ-CHECK-MASTER JOB-014 ( 9 LINES )
*
OBJECT=JOB-MASTER
* DATE: 19980818 TIME: 16:05:45 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-019
SHDESC=Depending on JOB-01
JOB-TYPE=MAC
SYMBOL-TABLE=EXAM-ST1
JCL-LOCATION=NAT
JCL-FILE=EOR-T212
JCL-MEMBER=E60-M01
JCL-NODE=148 EXECUTION-NODE=146
EARLIEST-START=010000
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000200
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ELAPSED-TIME=000200
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ELAPSED-TIME=000200
```



```
ELAPSED-TIME=000211
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000200
ELAPSED-TIME=000201
ELAPSED-TIME=000200
ELAPSED-TIME=000200
MOD-USER=SN MOD-TIME=19910614155051
IN-COND-DEF
IN-CONDITION=E60-JOB1-O IN-REFERENCE=RUN
END-OBJECT /* JOB-MASTER JOB-019 ( 37 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:45 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-019
EVENT-NAME=JOB-OK
OUT-CONDITION-P
OUT-CONDITION=E60-J019-O OUT-COND-REFERENCE=RUN OUT-COND-DELETE-ADD=A
END-OBJECT /* EOJ-CHECK-MASTER JOB-019 ( 9 LINES )
*
OBJECT=EOJ-CHECK-MASTER
* DATE: 19980818 TIME: 16:05:46 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=JOB-019
EVENT-NAME=JOB-NOTOK
SYSOUT-ACTION=O
MOD-USER=SN1 MOD-TIME=19950626125009 CREATION-TIME=19950626125009
END-OBJECT /* EOJ-CHECK-MASTER JOB-019 ( 9 LINES )
*
OBJECT=JOB-MASTER
* DATE: 19980818 TIME: 16:05:46 USER: GFR
OWNER=EXAMPLE
NETWORK=E60-FLOW
JOB=J07
JOB-TYPE=MAC
RESTARTABLE=N
ESC-ACTIVATION=) ESC-SUBMIT=$
SYMBOL-TABLE=EXAM-ST1
JCL-LOCATION=NAT
JCL-FILE=EOR-T212
JCL-MEMBER=E60-M03
JCL-NODE=148 EXECUTION-NODE=146
ELAPSED-TIME=000100
ELAPSED-TIME=000100
ELAPSED-TIME=000101
ELAPSED-TIME=000100
ELAPSED-TIME=000100
ELAPSED-TIME=000100
ELAPSED-TIME=000100
ELAPSED-TIME=000102
ELAPSED-TIME=000101
ELAPSED-TIME=000100
ELAPSED-TIME=000102
ELAPSED-TIME=000002
ELAPSED-TIME=000100
ELAPSED-TIME=000101
ELAPSED-TIME=000100
ELAPSED-TIME=000102
ELAPSED-TIME=000102
```



```
ELAPSED-TIME=000100
ELAPSED-TIME=000100
ELAPSED-TIME=000100
MOD-USER=GFR MOD-TIME=19951120132055
END-OBJECT /* JOB-MASTER J07 ( 35 LINES )
```


General Installation Notes

This section covers some general installation notes:

- Entire System Server Parameters
- Editor Buffer Pool
- Migration of Log Data to the SAT Log File
- Usage of Separate SAT Log Files for Several Products

Entire System Server Parameters

NOP Monitor Shutdown during NPR Node Shutdown

During the shutdown of an Entire System Server node on a **mainframe**, the NOP and NOM monitors running as subtasks under this node will be notified to shutdown themselves first.
To allow enough time for a NOP Monitor and its Monitor tasks for termination, please set the Entire System Server parameter **SHUTDOWN-MAX-DELAY** to **at least** twice the value of the largest NOP Monitor task wait time.

Example:
If the NOP Monitor wait time is 30 seconds, and if there are no higher task wait times, please specify **SHUTDOWN-MAX-DELAY=60** or more in the Entire System Server parameters.

Editor Buffer Pool

The Software AG Editor is being used in the NOP Monitor as well as in the NOP online system.
To avoid side effects from the online usage of NOP, the NOP Monitor should use **an Editor Buffer Pool other** than the online system of NOP.

On account of performance reasons, it is also recommended to define these buffer pools large enough that the editor does not need to swap to the EDTWORK dataset.

Migration of Log Data to the SAT Log File

Run program **LG-MIG41** to copy the existing EOR log to the SAT log file, which is being used for logging in Entire Operations Version 4.1.1 and above.
This program can be run on-line or in batch. It may be run only if both the old and the new NOP Monitors are **not running**.

The installation jobs contain a JCL for this purpose.

The following logical file numbers must be set before running the program:

LFILE	File
216	NOP system file which will be used with EOR411.
173	Old NOP log file (e.g. of Version 3.2.1).
131	SAT log file.

If LG-MIG41 fails during the migration, it has to be rerun from the beginning. Before rerunning it, the target SAT log file should be refreshed to empty.

If this is not possible, for example it is also used for NOM, run LG-MIG41 with the input parameter DELETE to delete any records previously written to the SAT log file.

If for any reason a reversion from EOR411 to the previous version is required, please refresh the old EOR log file and run LG-MIG41 with the input parameter BACKOUT to rebuild the EOR log file.

If this **fails**, refresh the EOR log file and rerun LG-MIG41 BACKOUT.

Once the migration to Entire Operations 4.1.1 has been performed successfully, the old EOR log file can be refreshed or deleted.

Usage of Separate SAT Log Files for Several Products

If you run several ESM products in the same environment, you have the choice between

- using a common SAT log file for all products
- using separate SAT log files for each product.

Notes about the Usage of separate SAT Log Files

1. In the SYSSATU / SATPnnn member, there must be different assignments for the SAT log file for each product.
2. If you use a common Natural parameter module for the ESM products, only one NTFILE setting for the SAT log file can be defined there.
   Therefore it is recommended to use the Natural SYSPARM facility to create a separate profile for each ESM product.
   These profiles must contain the setting of the LFILE 131 to the product-specific SAT log file.
   Example:

   ```
   PARM=E41100CP,STACK=(LOGON EOR411)
   LFILE=(131,9,11)
   ETID=*
   ```

3. **Warning:**
   Direct application switching from within the main menus of NOP and NOM **will not work** with different SAT log files, because there is currently no dynamic re-assignment of LFILE 131 available.

